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Association between Obesity and Affects Status, State/Trait Anxiety in Iranian Women

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ABSTRACT: Obesity is a major health concern. It has been implicated as a risk factor for several physical illnesses, functional limitations and poor quality of life. However, the objectives of this study are to examine the relationship between Affects status, State-Trait anxiety In obese and normal women. This study used data collected in adults 20 to 48 years old. This study focused on four indicators (positive affect, negative affect, State/Trait anxiety), in relation to the obese and normal subjects. Results indicated that both Affects status and State/Trait anxiety were significantly related to obesity. These results are discussed in terms of their implications for future studies of leader health, and their practical applications for promoting leader health while preventing obesity.
Keywords: Obesity, Affects states, Trait-State anxiety

INTRODUCTION

The healthcare industry in the United States is faced with unprecedented increases in treatment and management of chronic diseases. Two of the major contributing factors to this public health dilemma are obesity and mental health disorders. Researchers have observed a dramatic increase in rates of obesity over the last 20 years in the U.S. [1, 2]. According to the World Health Organization [3] obesity has more than doubled since 1980 worldwide and is now considered the second leading cause of preventable death? Smoking remains the leading cause, but researchers are estimating that if trends continue, obesity will surpass smoking to become the leading cause of preventable death [4].

According to the classification adopted by the World Health Organization [5]: underweight is defined as a BMI less than or equal to 18.5; normal is defined by a BMI greater than or equal to 18.5 but less than or equal to 24.9; overweight is defined as BMI greater than or equal to 25 but less than or equal to 29.9; obesity is defined as a BMI greater than or equal to 30.

The psychosocial, children and adolescents who are obese are more likely to have low self-esteem and low skills in social and sporting activities [6]. The young severely obese have a related quality of life five times lower than that of young healthy and similar to that of young people with cancer [7]. In addition, obese children have more symptoms of depression and anxiety than youth of normal weight [6, 7]. For the most part, obesity and depression have been compartmentalized as a separate health problem of physical and emotional natures. However, depression and obesity have shared symptoms such as sleep problems, changed appetite and deregulated food intake [8].

Cattell [9] and Spielberger [10] discerned state and trait anxiety; state anxiety was defined as the actually experienced emotional status–uneasiness, apprehension and tension, associated with stimulation of the autonomic nervous system; trait anxiety was defined as a predisposition to perceive diverse situations as threatening and to respond with anxiety.

Sample research has highlighted the role of obesity as a risk factor for a large number of chronic health complications, such as cardiovascular disease, hypertension, type 2 diabetes, stroke, sleep apnea and certain types of cancer, as well as complications in pregnancy and surgery [11]. Obesity has also been implicated as a risk factor for functional limitations and poor health-related quality of life [12]. However, while the physical consequences of obesity are well established, the relationship between obesity and mental health is still unclear and reported findings have been mixed. Some researchers examined prevalence of obesity in individuals with mental disorders [13-14]. And others examined the prevalence of mental disorders in obese individuals [15]. However, most of these studies examined simple associations between depression/depressive symptoms and body fat without accounting for possible mediators and/or moderators of their relationship [16].

Luppino et al. [17], conducted a systematic review and meta-analysis of 15 studies. Their analysis confirms the existence of a reciprocal link between obesity and depression: obese persons had a 55% increased risk of developing depression over time, and depressed persons had a 58% increased risk of becoming obese. Simon et al. [18] found obesity to be associated with an approximately 25% increase in odds of

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mood and anxiety disorders. The evidence for the effect of obesity on self-esteem is mixed [19-22]. Some studies suggest that the effects of obesity on psychosocial functioning operate through body image, in particular body dissatisfaction [23-27] and weight-related teasing) [28-31]. Two studies [30-32] reported that obesity is associated with worse general health and functioning, but not poor school and social functioning, or lower self-esteem and more depression.

Accordingly, our purpose here is to examine association between obesity and affects status, State/Trait anxiety in obese and normal women. To this end, we use data from sample of adults 20–48. Given the paucity of epidemiologic studies of obesity and affects status, State/Trait anxiety in obese and normal women, the lack of consistent results across studies, and the paucity of prospective data.

MATERIAL AND METHODS

Participants

The population for this study included all the female of Ahvaz city. One hundred ninety four female (age: 39.32 ± 4.12 years) were selected to an obesity women (N=97) and a normal women (N=97) from the Ahvaz's Sports club and questionnaires were filled out by groups. The reason for selecting 194 subjects was that in correlation studies, 50 subjects are adequate. Therefore, at the present study for increasing the external validity of the research and decreasing the effect of intervening factors, a larger number of samples were selected.

Material: State-Trait Anxiety Inventory (STAI): State-Trait Anxiety Inventory is a self-rating measure of anxiety and it consists of two parts: the STAI-STATE describing the actual situation and the STAI-TRAIT general measure of anxiety [10]. Participants indicated their degree of approval on the items on a 4-point Likert scale. Possible scores range from 20to 80 for each form.

Positive Affectivity and Negative Affectivity Schedule (PANAS): Positive Affectivity and Negative Affectivity Schedule is a self-rating measure of positive and negative mood state [33]. It consists of the 10 items for Positive Affectivity Schedule (PA) and 10 items for Negative Affectivity Schedule (NA). Participants indicated their degree of approval on20 items on a 5-point scale ranging from 1 (not at all) to 5 (extremely). Body mass index (BMI) was calculated as weight (kg) divided by height squared (m2), and obesity was defined as BMI ≥30 kg/m2.

Procedure: Two group of 214 women aged 20 – 48 years volunteered to participate in the study. Each participant was tested individually in sports club, they were asked to fill up the questionnaires. The examination lasted approximately 15min. The MANOVAs and correlations reported herein were computed using SPSS/21 .

Statistical Evaluation: All strategy data were normally distributed. The Bartlett Test showed homogenous variances. Also, Box's test was not significant (F=1.62; Box=17.74, P=0.31). The parametric procedure applied in this study was multivariate analysis of variance (MANOVA) and Pearson's correlation. The significant level was set at <0.05.

RESULTS

Descriptive findings indicate that present samples included the age range of 20-48 female subjects.The majority of obese and normal are high school graduates. Descriptive statistics of all language sampling measures and academic average are presented in Table 1.

As can be seen in Table 1, The Mean negative affect scores were 23.53 (5.98) for the normal women and 30.12 (7.04) for the obese women. There was an approximately 7-point increase for the obese women.

Regarding the difference of means between two groups, the results from MANOVA indicated a significant difference between the two groups, in terms of at least one dependent variable ($F_{(4.189)}$ =18.34, Wilks' Lambda=0.72; partial eta squared=0.28, P=0.001).

Table 1. Means and Standard Deviations on affects status, and state/trait anxiety in Each Group

Variables	Normal women		Obese women	
	M	SD	M	SD
Negative affect	23.53	5.98	30.12	7.04
Positive affect	42.15	6.12	38.40	7.69
State anxiety	38.20	8.62	47.07	8.01
Trait anxiety	39.27	9.23	46.73	8.70

Table 2. Multivariate Analysis of Variance (MANOVA) on affects status, and state /trait anxiety in Normal and Obese women

Source	Variable	MS	$F_{(4,189)}$	Sig.	ES
Group	Negative affect	2104.74	49.25	0	0.20
	Positive affect	682.96	14.12	0	0.07
	State anxiety	3812.37	55.00	0	0.22
	Trait anxiety	2694.47	33.48	0	0.15

As can be read from Table 2, The MANOVA on the scores of the Mean negative affect variable indicated significant difference between the two groups (F (4, 189) =49.25, P=0.0001). This means that obese women have a more negative mood. Also, correlation results and data analysis have been shown on Table 3.

Table 3 shows BMI correlation with affects status, and state/trait anxiety among women. The results of this table indicate that there is a positive and significant correlation between BMI with negative affect among women ($p<0.01$). It means that the increase in one of the variables is followed by the increase in other variables and vice versa

Table 3. Pearson correlation to show the relationship between BMI, affects status, and state/trait anxiety

Variable	NA	PA	TA	SA
BMI	0.33**	-0.18*	0.27**	0.36**
Negative affect		-0.69**	0.65**	0.68**
Positive affect			-0.61**	-0.65**
Trait anxiety				0.72**

***Correlation is significant at the 0.05 level (2-tailed); **Correlation is significant at the 0.01 level (2-tailed).**

DISCUSSION

In this research we wanted to determine the association between obesity and affects status, state /trait anxiety in obese and normal women. Individuals, who pass through intense emotions as sadness, anger, and anxiety, try to cope with them by using binging, and consequently they immediately experience pleasure and forget real life problems [34]. It is possible that for our obese, anxiety and depression represent the risk factors that might contribute to maintenance of their weight problem. Other authors obtained similar results. Emotional eating is an important determinant of bingeing [35]. It is highly prevalent among obese persons that are seeking treatment but also reliably differentiates non-treatment-seeking obese persons from the non-obese [36]. Anxiety is one of the negative emotions that triggers emotional eating, and there is experimental support for anxiety increasing food consumption among obese persons.

Obese patients experience a higher degree of psychological distress leading to depression. However, existing information on the correlation between obesity and depression is inconsistent [16, 37]. Whereas some studies demonstrate that obesity increases the risk of depression [17]. Others found no correlation between them [37]. Murphy et al. [38] reported that depression symptoms among obese patients tend to be more severe than in non-obese.

In studies by Cserje´si et al. [39] performed the role of negative emotional states such as anxiety and depression as a mediator of poor executive function and obesity demonstrated that expression of The depression could reduce the capacity of executive function in individuals obese [38]. Studies have shown that changes in mood, physical symptoms, and immune function have been associated with positive affect. Larsen et al. [12] showed that positive affect, affects mental health. Gill and colleagues [40], in his research concluded that positive affect has an effect on pain. This finding [17, 39, 41], indicated that obese women who have difficulty identifying and communicating their feelings have a tendency to eat in response to emotions, specifically negative emotions. Williams et al. [42] suggested that different aspects of eating behaviors have dissociable effects on cognitive-affective function. In explaining these findings, we can say, the effect of obesity on the body image, psychological functioning, especially of body dissatisfaction [23, 27] and social weight-related teasing acts [28, 29, 31]. Such factors will weaken the positive affect and impair mental health.

Between obese and normal, there are significant differences in terms of anxiety. This assumption implies that there is a significant difference between groups on the variables of state anxiety. This means that obese women compared with normal women have higher state anxiety. In earlier studies, [42] reported that in a study of obese and overweight mean scale isolation, anxiety, depression had statistically significant relationship between normal weight group and obese. Attar Kashani et al. [43] in their research were reported lower confidence for obese and overweight. Petruzzello et al. [44] showed that acute physical activity as a tranquillizer reduces state anxiety effectively. The findings of this study with [6-45], are consistent.

Overall, the current study has demonstrated the association between obesity and affects status, state /trait anxiety in Iranian women. Additionally, it can stimulate further experimental research in this field. Testing the aforementioned hypotheses can be one research direction. Also, future mood induction studies would probably benefit from inclusion of the constructs such as anxiety sensitivity and/or cognitive vulnerability. This way, one would broaden the scope of research in this field by exploring the relations between state anxiety and theoretically relevant constructs other than trait anxiety. Also, more complex experimental designs might include additional behavioral measures (e.g., memory impairment, measures of attention) strengthening the external validity of conclusions that can be drawn from the experiments inspired by the trait-state model of anxious responding. Lastly, future research in this field should focus more closely on possible mediating mechanisms. Ideally, it would be worth exploring the ways traits exert their influence on states and behaviors by delineating particular mechanisms of their influence.

Limitations

There are several limitations of our study. The correlational study design does not allow us to conclude about the causal relationship between psychosocial variables and weight gain . The results obtained are relevant only for women. The relationship that we found between emotional status, anxiety, and body weight may be different among males. Further, the role of psychological functioning in obese individual may be different for males and females.

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