ORGINAL ARTICLE

Exploring the Relationship of Emotional Intelligence and Obesity among University Students

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Abstract

Objective: Obesity is related to emotional pressures and psychological disorders. Psychiatric disorders, acute psychological stress, psychological problems, and emotional factors induce obesity. This study aimed to investigate the relationship between scale and subscale of emotional intelligence (EI) and obesity among university students in Golestan province, Iran.

Materials and Methods: This is a descriptive study. The sample size contained 358 university students. The research instrument was Bar-On and Parker Emotional Intelligence (EI) Questionnaire. The collected data were analyzed by SPSS 22. Moreover, descriptive statistics, Pearson's correlation, and multiple regression analyses were also done.

Results: There is a direct and inverse relationship between students' total EI (-0.415) and its subscales including intrapersonal skills (-0.393), interpersonal skills (-0.313), adaptability (-0.359), stress management (-0.383), and general mood (-0.372) with overweight.

Conclusion: The results of this research may not only open a new window to assist in achieving successful nutritional diet programs, providing people but it also can pave the way for further research conducted by experts in nutrition, medicine, and psychology. The findings of this study will enhance social public awareness on the side- effects of obesity equipping the public with some counseling to lose weight through using EI for people, especially students suffering from obesity.

Keywords: Intelligence, Emotion, Emotional intelligence, Obesity

Introduction

Obesity is a potential threat to health (1). Obesity and related complications are a global problem (2,3). Recent studies indicated an increase in the prevalence of obesity in different countries. The prevalence of obesity among school-age children in Iran was reported as 5 to 10% (4,5). Obesity affects psychological and mental health during teenage, youth, and adulthood noticeably (6). Young people who do not have the appropriate body mass index (BMI) often hesitate from social activities (7).

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Obesity can be easily recognized and prevented and their early diagnosis provides timely intervention (8).

The emotional intelligence (EI) concept has a social-psychological connotation and is known as a set of non-cognitive capabilities and skills, which affect one's capacity in dealing with external requests and stresses. In fact, obese people may easily succumb to social pressures under various situations, so in terms of EI, they are considered poor (9,10). Most researchers believe that obesity is a complex issue that contributes to metabolic, nutritional, and psychosocial factors. Research has also proven that obese people suffer from high levels of negative mood and emotional mismanagement. When a person believes eating improves mood, in response to his negative emotions, he will tend to eat more in order to enhance his temper (11). Snack, Angels, Johnsons, and Vanastryn have shown the negative effect of excitement among obese people on their eating patterns (12). Emotional eating is defined as a useful strategy to deal with negative emotions such as stress, loneliness, boredom, anxiety (13). Moreover, studies conducted in the field of emotional eating have attempted to explain obesity in this scope. Hence, they have shown that in response to negative emotional states, obese people eat much more than people with normal weight (14).

It has been proven that there is a significant relationship between the prevalence of obesity in children as well as adolescents and a wide range of diseases such as hypertension, type 2 diabetes mellitus, and cardiovascular diseases (15). More than 50% of obese children will be obese in adulthood (16). Obesity influences the physical and mental health of children and adolescents (17,18). EI can be a predictor of various life outcomes, including personal health. Emotions can motivate you to act or to refrain from action. (19,20). EI, like intelligence, is a predictor of success and social adjustment (21-23).

EI is one of the concepts, which affect the rate, and extent of people's weights. The purpose of this study was to investigate the relationship between EI and its components (intrapersonal skills, interpersonal skills, adaptability, stress management, and general mood) and obesity in freshmen in the Payame Noor University (PNU) units in the Golestan province, Iran.

Materials and Methods

This is a descriptive study. The statistical population included all first-year students in the (PNU) units of Gonbad, Galikesh, Kalale, and Azadshahr, in the East of Golestan province, (Iran) in 2015, which consisted of 6150 students. To select the participants among study population and according to Krejcie and Morgan table, 358 obese students (BMI: 30 - 39.9 kg/m²) were selected as samples and the EI questionnaire was completed. The BMI of each student was calculated based on the ratio of weight (kg) to the square height (sqm^2).

Emotional Intelligence Questionnaire (EQ- i YV) designed by Bar-On & Parker as a self-assessment scale was used to assess the participants' EI (24). The questionnaire has 60 questions and 5 subscales, including intrapersonal skills, interpersonal skills, adaptability, stress management, and general mood. Test responses were also set on a four-degree range from strongly agree to strongly disagree. This questionnaire which is used frequently abroad to measure EI of such age group was translated by Jafar Shabani (2011) to measure EI among Iranian teenagers in Gorgan city. To calculate and evaluate its reliability, it was conducted in a 54-participant population and its Cronbach's alpha for EI was 0.722 and for the subscales: intrapersonal skills, 0.720, interpersonal skills, 0.722, compatibility, 0.711, stress management, 0.709, general creation, 0.734, and the reliability score of this sample (n= 54) was r= 0.86. This experiment was conducted twice with an interval of two weeks (25-26). Obesity was measured according to the World Health Organization standard body mass index. In most cases, doctors use a special equation, body mass index, to diagnose

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obesity based on height and weight. When a person's body mass index varies between 25 and 29.9, the person is overweight and if it is between 30 and 39.9, he is obese. In this study, the body mass index was calculated formula developed by the Belgian statistician, Adolphe Quetelet (27).

The collected data were subjected to some statistical analyses by using Statistical Package for Social Sciences (SPSS 22.0). Moreover, descriptive statistics, and Pearson's correlation, and multiple regression analyses (inter) were also employed in this study.

Ethical considerations

This study was approved by the ethics committee of Payame Noor University, Tehran, Iran (IR.PNU.REC.1399.182).

Results

Table 1 indicates the means and standard deviations for all the observed variables. Descriptive statistics were worked out to view the pattern of the score distribution. The mean and standard deviation of EI scale is 3.17 (± 38) (Table 1).

Correlations among all the two variables were computed through Pearson's Correlations method. It was aimed at examining the degree of association between the measures of EI scale and sub-scales with obesity. A careful inspection of Pearson's correlation (Table 2) reveals that all the variables correlate significantly with each other. The findings as depicted in table 2 showed that there was a negatively significant relationship between students' total scores of EI (r= -0.415, *P*-value: 0.01), intrapersonal (r= -0.393, *P*-value: 0.01), interpersonal (r= -0.313, *P*-value: 0.01), adaptability (r= -0.359, *P*-value: 0.01), stress management (r= -0.383, *P*-value: 0.01), general mood (r= -0.372, *P*-value: 0.01), and their obesity. Here the correlation of the EI with obesity is negatively significant which shows that the students with low EI scale and sub-scales are having high obesity scores, so it can be said that there is a negative association between the EI scale and sub-scales with obesity scores (Table 2).

Multiple Regression Analysis (MRA) results of the predictive EI sub-scales on obesity have been presented in table 3. The EI sub-scales are statistically significant predictors of obesity (R^2= 0.398, F= 36.457, and *P*-value< .05). R^2 value means 39.8% of the variance in obesity decrease is explained by EI sub-scales.

Table 1. Descriptive of studied variables

Variables	Minimum	Maximum	Mean	Std. deviation
EI*	2.85	3.85	3.17	0.38
EI sub-scales				
Intrapersonal skills	2.20	3.88	3.11	0.46
Interpersonal skills	2.13	4.00	3.00	0.40
Adaptability	2.25	4.00	3.12	0.52
Stress management	2.23	3.54	3.00	0.53
General mood	2.11	3.82	3.21	0.44
Weight	80.50	100.40	90.23	9.37
Height	157.50	180.20	171.21	10.19
BMI	30.00	32.12	31.10	4.68

N= 358

* Emotional Intelligence

Table 2. The relationship between obesity and EI subscales

Variables	1	2	3	4	5	6	7
1. Total EI	1						
2. Interpersonal	0.522**	1					
3. Intrapersonal	0.486**	0.485**	1				
4. Adaptability	0.512**	0.414**	0.401**	1			
5. Stress management	0.510**	0.443**	0.437**	0.514**	1		
6. General mood	0.499**	0.419**	0.512**	0.534**	0.475**	1	
7. Obesity	-0.415**	-0.393**	-0.313**	-0.359**	-0.383**	-0.372**	1

Pearson's correlations, ** *P*-value< 0.01, * *P*-value< 0.05, N= 358

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Based on the results of the MLR model in this study, the sub-scales interpersonal (X_1), stress management (X_4), general mood (X_5), adaptability (X_3), and intrapersonal (X_2), show significant contributions toward the prediction of obesity (bX_1= -9.547, bX_4= -5.932, bX_5= -5.435, bX_3= -4.931 and bX_2= -3.635) (Table 3).

Discussion

The study findings indicated a significant relationship between EI and its sub-scales and obesity. These findings are in line with the findings of Feyzpour et al., who showed that there is a relationship between obesity and cognitive intelligence and EI (28). These findings were consistent with Fisher, Chen, and Katroman's findings; the fact that controlling emotional eating can help weight loss (29). The results of several other studies suggested that overeating occurred in response to various emotions plays a significant role in the etiology of obesity (30,31,33). In addition, Makhet et al., in their review concluded that obese people suffer from high levels of negative mood. When someone believes eating improves his temper, he desires to overeat to manage and regulate his negative emotions (33). In addition, the results offered by Duggan et al showed that obese people consider eating excitement as a helpful strategy to deal with negative emotions (14). Therefore, it can be expected that getting familiar with emotional intelligence and the strategies applied to cope with negative emotions can be an effective way to reduce emotional eating and subsequently, enhance weight loss and body mass index.

Scientific evidence suggested that emotions could have a negative impact on eating patterns (34). According to different studies, negative emotions such as anger, anxiety, and depression are associated with overeating (35). Thayer believes that eating and drinking is one of the ways used by people to manage their mood (36). So, it seems overeating is more a coping mechanism for dealing with emotional regulation and mood control than a way to satisfy physiological needs of hunger and thirst. Hence, it is expected that getting to know EI, familiarizing people with their feelings and emotions, equipping them with strategies to distinguish rational and irrational beliefs about emotions, encouraging them to accept these negative feelings, and finally, educating them with proper ways to face and monitor them can assist them to choose the most appropriate reaction in emotional situations. Thereby, it would help them reduce emotional eating and lose weight and BMI rate.

Given these results, it appears that EI and its subgroups are among the most critical issues affecting the students' fitness and mental and physical health. Therefore, a successful society can increase its knowledge on the above-mentioned ideas. Additionally, it is required to transfer useful information on EI to its elementary and secondary–level students to get informed of this issue. It should also use this knowledge practically in their nutrition diets and achieve physical fitness that contributes to physical and mental health. Also, societies, where people are looking for physical and mental health, should help increase awareness of EI and its effects on obesity and take effective measures to put priority on them more than other actions and programs. Such measures can be in form of workshops such as: holding EI workshops with the aim of familiarity with its components including understanding and managing both

Table 3. Predictor of obesity based on EI & its sub-scales

Dependent variables	Predictors	R^2	F	β	*P*-value
Obesity	(constant)	39.8	38.457		0.0001
	Interpersonal			-0.748	0.0001
	Intrapersonal			-0.418	0.003
	Adaptability			-0.468	0.002
	Stress management			-0.561	0.001
	General mood			-0.686	0.0001

Multiple regression analyses (enter), Note: N= 358

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positive and negative stresses, time management, assertiveness, and coping with negative emotions like stress, anxiety, fear, and aggression.

Conclusions

The results of the present study indicated that higher EI led to reducing obesity, promoting adherence to preventive behaviors or disease complications, and providing the ground for controlling weight. Therefore, the effective factors in EI are recommended to be identified to carry out appropriate interventions. Further educational programs are also suggested to be implemented to increase the level of EI.

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Conflict of Interest

There is no conflict of interest to declare.

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