FACTORS OF OBESITY AND PERSONALITY TRAITS AMONG MIDDLE-AGED WOMEN OF LAHORE

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ABSTRACT

Objective: To determine the factors of obesity and role of personality traits in prevalence of obesity among middle-aged women.

Study Design: Cross sectional analytical research design.

Place and Duration of Study: Three universities (Lahore College for Women University, Riphah International University, University of Central Punjab) and three hospitals (Services Hospital, Jinnah Hospital and Shalimar Hospital) of Lahore City, from Feb 2019 to Jul 2019.

Methodology: Four hundred clinically diagnosed obese women were collected using Purposive Sampling. The age range of participants was 25-50 years. Women diagnosed with any other clinical problem were excluded from the study. Factors of obesity were assessed using Factors for Obesity Scale. To measure the relationship of personality traits with obesity Neo Personality Trait Scale was used. The data was analyzed using Pearson correlation, simple regression analysis and independent sample t-test using SPSS version 22.

Results: There was strong positive correlation of psychological, emotional and cognitive factors with obesity. Neuroticism trait was significant positive (β=0.25, p<0.01) and conscientiousness trait of personality was significant negative predictor of (β=-0.43, p<0.01) obesity. Latter middle-aged women were more obese as compared to women in age of early middle aged- women.

Conclusion: Psychological, emotional and cognitive factors play important role in the pervasiveness of obesity. A definitive positive correlation was found in these factors and obesity. Neuroticism trait personality strongly predicts obesity.

Keywords: Conscientiousness, Factors of obesity, Middle aged, Neuroticism, Personality traits.

INTRODUCTION

Obesity has become a worldwide concern due to its increasing prevalence and associated cluster of diseases that reduce quality of life and its expectancy. Excessive deposition of fat in the adipose tissue due to chronic over nutrition, reduced physical activity and hereditary reasons is called as obesity. Body mass index (BMI) ≥30 kg/m 2 is used to define obesity[1]. Obesity is associated with an increased risk of developing a broader range of comorbidities e.g. cardiovascular disease, type 2 diabetes and cancer. Siddiqui *et al*, in 2001 reported that 3.4 million people die of obesity relevant causes per year[2]. Pakistan is facing from an emerging epidemic of obesity. An alarming increase in the prevalence of obesity has been reported in women. Today, more than 47% of the Pakistani population is categorized as obese[3].

The etiological basis of obesity usually lies in some combination of biological, environmental, genetic, psychological, emotional and cognitive attributes[4]. Psychological factors are strongly associated with overeating particularly in women. People eat more and unhealthy in depression and anxiety. According to Grogan, emotions e.g. helplessness, boredom, and anger are important in excessive eating patterns[5]. They also stated that people with disturbed emotions are least interested in physical activity as well. They use food as coping mechanism. So, whenever they feel distressed, they turn to eat food and such eating may result in temporary attenuation of their distressed mood. Cognitive factors were also found to be associated with overeating.

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When cognitive functions are impaired, people automatic impulses (e.g. unhealthy and uncontrollable eating) are not adequately handled[2].

While psychological and genetic factors play important role in the prevalence of obesity, they may not essentially clarify all the substantial individual factors in obesity. To assess these individual factors, there is an immense need to consider one's personality traits. Everyone has unique personality and during the last decade there has been growing interest to explore the influence of one's personality on his or her health and eating habits[6]. There are five traits of personality-openness, extraversion, agreeableness, conscientiousness and neuroticism Conscientiousness and neuroticism trait of personality. These traits are greater in concern of contemporary researchers with reference to working middle age women who are in constant struggle of managing their weight between work family conflicts similarly, as women staying at homes[7].

Neuroticism personality traits are strongly and positively correlated with obesity. Furthermore, significant correlation between neuroticism personality trait, anxiety and obesity were found particularly in women[8]. Some studies found that people conscientiousness personality protect them being obese because such people are disciplined, physically active and less likely to eat[9]. Remaining three traits were not found significantly associated with obesity[6].

Although, much research has investigated biological basis of obesity, psychological factors are ignored, and the association of individual personality with obesity remains unclear. Thus, further research on the association of psychological factors and personality traits with obesity is particularly needed in samples of age 25-50 years as the largest increase in the prevalence of obesity in Pakistan has been seen in this age group. Furthermore, there is strong evidence that obesity is more prevalent in middle age women than in younger women. Insufficient information is available regarding obesity in middle age group. This study will provide the information regar-ding obesity prevalence in various age groups, especially in 40 years and older. Furthermore, limited local work has been conducted to explore psychological factors of obesity with relation to personality traits of women of Pakistan. So, the aim of this study was to explore the association of psychological factors and personality traits with obesity on a large indigenous sample of women.

METHDOLOGY

This was cross sectional analytical study, conducted including public and private universities (Lahore College for Women University, Riphah Internaltional Univerity, University of Central Punjab) and hospitals (Services Hoapital, Jinnah Hospital and Shilimar Hospital, Lahore) after approval of Ethics and research Committee of Lahore College for Women University Research (Reference no. 2820) from May 2019 to November 2019. Consective sampling technique was used to collect the sample. The criterion given by Field and Francis (2017) was used to select the sample size[10]. A sample of 400 obese working women with age range of 25-50 years were included. Only diagnosed women with obesity were included in the sample. Women with any clinical problem were not included in the sample. Pregnant women were also excluded from the study. To gather sample demographic information, a form was prepared including age, height and weight etc.

Obesity factor scale[11], was used to identify the factors involved in the development of obesity. It is a self-report measure consisted of 23 items with options ranges from "never" (1) to "always" (3). Factors of obesity scale score ranges from 23 to 69 representing higher influence of factors of obesity. This scale is used by several researchers to assess factors of obesity. Cronbach alpha of Obesity Scale is α=0.86.

Personality trait scale[12], was used to assess correlation between personality trait and obesity. This is ten item scale. The scale uses seven point scale ranging from disagree strongly (1) to agree strongly (7). Total score ranges from 10 to 70. Higher score represent high prevalence of

personality trait. This scale is internationally accepted by the researcher to assess personality traits. Cronbach alpha of personality trait scale is α=0.86.

Data was analyzed using Statistical Package for Social Sciences (version-23). Reliability analysis was conducted to assess the internal consistency of all the scales used in this study. Relationship of obesity with obesity factors and types of personality was explored using Pearson correlation test. Regression analysis was conducted to see the effect of the type of personality on obesity.

ted with obesity. Whereas, neuroticism type of personalityis significantly positively correlated with obesity.

Table-III showed Conscientiousness type of personality significantly negative predicted obesity. Table-IV showed neuroticism type of personality positively predicted obesity. Furthermore, regression model was significant with p-value 0.01.

Table-V described Obesity in two age groups early (25 to 40 years) and latter middle age (40-50

Table-I: Descriptive statistics of study variables (n=400).

Scales	Number	Mean ± SD	a	Potential Min-Max	Actual Min-Max
Obesity	23	86.59 ± 34.15	0.82	23-69	41-56
Psychological	11	18.04 ± 12.43	0.90	11-33	16-29
Cognitive	11	17.07 ± 13.29	0.87	11-33	18-28
Emotional	11	23.08 ± 14.15	0.78	11-33	22-32
Conscientiousness	5	45.07 ± 12.05	0.68	5-35	9-22
Neurotic	5	48.07 ± 11.39	0.88	5-35	12-28

Table-II: Correlation among study variables (n=400).

S. No.	Variables	Obesity	Psy.f	Cog.f	Emot.f	Concio.p	Neurotic.p	p-values
1.	Obesity	-	0.59**	0.65**	0.62**	-0.58**	0.72**	**p<0.01
2.	Psychological	-	-	0.44**	0.57**	-0.64**	0.61**	**p<0.01
3.	Cognitive	-	-	-	0.65**	-0.65**	0.68**	**p<0.01
4.	Emotional	-	-	-	-	-0.71**	0.63**	**p<0.01
5.	Conscientiousness	-	-	-	-	-	-0.77**	**p<0.01
6.	Neurotic	-	-	-	-	-	-	-

Obesity in different age groups was examined using independent sample t-test. The current study considered p-value ≤0.05.

RESULTS

There were 400 females collected from three universities and three hospitals of Lahore. The age range of sample was 25 to 50 (32.28 ± 10.89) years. All scales used in this study were internally consistent (table-I).

Table-II demonstrated correlation among study variables. Psychological (r=0.59, **p<0.01), emotional (r=0.65, **p<0.01), and cognitive factors (r=0.62, **p<0.01) are significantly positively correlated with obesity. Conscientiousness type of personality is significantly negatively correla-

years). Both age groups differed significantly. Women at their latter stage of middle age were more obese as compared to early stage of middle age (p=0.02).

DISCUSSION

The current study was conducted to explore the factors (psychological, emotional, and cognitive) of obesity. Results of present study showed strong positive association of psychological, emotional, and cognitive factors with obesity. Beray (2017) conducted a study in UK on a large sample collected from different professions including both gender and found similar results[1]. Two longitudinal studies conducted on a large sample of 2,49613 and 5,34114 in India, both

found that low in emotional abilities were associated with risk of developing obesity. Problem-solving skills, knowledge and reasoning are useful in engaging in a healthy lifestyle and in preventing not only chronic diseases but also unhealthy conditions[3-15]. So, when these cognitive abilities are not good individual eating habits will be inappropriate. Findings of our study showed significant positive correlation between cognitive factors and obesity. Cohen' study[16] also showed similar results.

calorie consumption and therefore are healthier as compared to people with personality trait of neuroticism. People with conscientiousness personality trait are typically characterized as self-disciplined and organized. So, their way of spending life helps them to maintain their weight.

Another objective of this study was to compare obesity in women of aged range of early middle age and later middle age women. Results showed that early middle age women had suffered more in obesity as compared to latter

Table-III: Linear regression analysis for predicting obesity from conscientious personality trait (n=400).

Predictor Variable	Obesity			T	*p*-value
	B	SEB	ß		
Conscientiousness	-0.58	1.02			
R²		0.18	-0.43	1.31	**p<0.01
F		91.34			

Table-IV: Predicting obesity from neuroticism personality trait (n=400).

Predictor Variable		Obesity			T	*p*-value
		B	SEB	ß		
Neurotic		0.72	1.12			
R²			0.15	0.35	1.21	**p<0.01
F			56.41			

Table-V: Comparison for different middle age stages on obesity scale (n=400).

	Early Middle age (n=200)	Latter Middle age (n=200)	T (398)	*p-value*	Cohen'sd
Factors	Mean ± SD	Mean ± SD			
Obesity	33.55 ± 11.52	36.64 ± 9.43	-3.09	0.02	1.38

***p<0.001, M=Mean, SD=Standard Deviation

This study also examined relationship of personality traits with obesity. Findings of our study indicated that neurotic personality trait significantly positively associated with obesity. Sutlivan's (2016) cross sectional study, comprising 883 participants with aged range of 30 to 65 years, concluded that neurotic personality was significantly positively correlated with obesity[17]. Ones personality influence his or her way of life particularly eating behavior. So, it could be speculated that inappropriate behavior of eating contribute to higher prevalence of obesity. Results of this study regarding relationship between conscientious personality trait and obesity showed significant negative relation. Herpertz (2018) also showed similar results[18]. Reason may be that they are conscious about their weight and

middle age women. Our findings are similar with the research of Fraguel conducted in 2019[19]. Change in body composition (decreases in FFM and increases in fat mass) less physical activity, psychological problems, atherosclerosis and diabetes type 2 in middle aged group are major reasons of obesity. Goyal (2017) also supported that people in latter middle age suffer more in obesity[20].

RECOMMENDATIONS

This study emphasizes strong need to adopt healthy eating behaviors that are associated with lower mental distress, and higher psychological well-being. So, the present study will create awareness to sufferers to adopt healthy life style.

This study will also be helpful for clinicians to treat health problems caused by obesity.

LIMITATION OF STUDY

This research has numerous strengths including a large sample, detailed information regarding obesity factors and personality trait association with obesity. However, for future research participants from both gender and various fields should be taken to generalize the results.

CONCLUSION

Obesity has become a serious issue. Serious health concerns e.g. diabetes, osteoarthritis back pain, cardiovascular diseases, joint trauma, and hypertension are noted because of obesity. So, this has become a problem that is too expensive to ignore. Therefore, this study aimed to explore factors or roots of obesity that were ignored. Results of present study found definitive correlation of obesity with psychological, emotional and cognitive factors. Obesity was explored in women; the most affected group. Furthermore, latter middle age group clearly suffer more in obesity.

CONFLICT OF INTEREST

This study has no conflict of interest to be declared by any author.

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