KMAN PUBLISHING INSTITUTE
Journal Website

Article history:
Received 06 October 2023
Revised 23 November 2023
Accepted 29 November 2023
Published online 25 December 2023

Journal of Assessment and Research in Applied Counseling

Volume 5, Issue 5, pp 15-22

E-ISSN: 3041-8518

The Relationship between Maladaptive Thoughts and Stress with the Mediation of Body Image in People with Bulimia Nervosa

Melody. Vafaey Moghaddam[1], Kobra. Haji Alizadeh[2*], Eghbal. Zarei[3], Azita. Amirfakhraei[4]

[1] PhD student in general psychology, Bandar Abbas Branch, Islamic Azad University, Bandar Abbas, Iran
[2] Associate Professor, Department of Psychology, Bandar Abbas Branch, Islamic Azad University, Bandar Abbas, Iran
[3] Associate Professor, Department of Psychology, University of Hormozgan, Bandar Abbas, Iran
[4] Assistant Professor, Department of Psychology, Bandar Abbas Branch, Islamic Azad University, Bandar Abbas, Iran

*** Corresponding author email address**: Ph-alizadeh@yahoo.com

A r t i c l e I n f o

Article type:
Original Research

How to cite this article:
Vafaey Moghaddam, M., Haji Alizadeh, K., Zarei, E., & Amirfakhraei, A. (2023). The Relationship between Maladaptive Thoughts and Stress with the Mediation of Body Image in People with Bulimia Nervosa. *Journal of Assessment and Research in Applied Counseling*, *5*(5), 15-22.
http://dx.doi.org/10.61838/kman.jarac.5.5.2

© 2023 the authors. Published by KMAN Publication Inc. (KMANPUB), Ontario, Canada. This is an open access article under the terms of the Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

A B S T R A C T

Objective: This research was conducted with the objective of examining the relationship between maladaptive thoughts and stress, mediated by body image, in individuals diagnosed with Bulimia Nervosa.

Methods and Materials: The methodology employed in this study was correlational, utilizing path analysis. The statistical population comprised all women diagnosed with Bulimia Nervosa who visited psychological and counseling centers in Tehran during the first three months of 1401 in the Persian calendar. The sample studied included 260 women from these centers, who were selected after explaining the research objectives and obtaining their informed consent, in compliance with the study's inclusion and exclusion criteria. The Dysfunctional Attitude Scale (DAS-26) by Weissman and Beck, the Body Image Questionnaire by Littleton et al., and the Depression, Anxiety, and Stress Scale-21 (DASS-21) were used for data collection. The data were analyzed using path analysis methodology; SPSS version 21 and LISREL software were utilized for data analysis.

Findings: While establishing the assumptions for path analysis, the results indicated that: the direct path from maladaptive thoughts to stress is significant; the indirect effect of maladaptive thoughts on stress through fear of body image is also significant.

Conclusion: Given the findings of this research and the results of related studies in this field, it can be concluded that maladaptive thoughts directly affect the emergence of stress in individuals with Bulimia Nervosa. Moreover, the mediating effect of body image is significant in this relationship, increasing the severity and occurrence of stress in affected individuals. These findings could form the basis for designing intervention programs aimed at improving body image and reducing maladaptive thoughts in affected individuals, thereby preventing the creation of a vicious cycle of these interacting factors.

Keywords: *Maladaptive Thoughts, Stress, Body Image, Bulimia Nervosa*

1. Introduction

Emotional eating, defined as eating in response to a range of negative emotions for coping purposes despite the absence of actual hunger, often occurs in adults with a high body mass index (BMI) (Reichenberger, Schnepper, Ard, & Blechert, 2020). Gerhart and Heberbrand (2021) believe that addiction and excessive inclination towards overeating increase the likelihood of obesity and overweight by up to 70% compared to others. Consequently, many diseases are influenced by obesity (International Health Institute, 2017, as cited in Kolatt, 2018). Identifying the cause of overeating is challenging, as the disorder seems to arise from the correlation of multiple causes, and treatment should consider physical issues, behavioral problems, and psychological matters such as body image disorder (Drochi, 2010). Today's lifestyle, characterized by increased use of modern technologies leading to reduced physical activity and more rest, is a phenomenon linked to higher consumption of high-calorie foods and obesity (Souza, 2008). Obesity is considered a health problem leading to conditions like diabetes mellitus, hypertension, high blood cholesterol, heart diseases, and strokes. According to World Health Organization (WHO) standards, a BMI between 25 and 30 kg/m2 indicates overweight, and a BMI over 30 kg/m2 indicates obesity (Sinha, 2018; Nabeshinani & Sakakibara, 2009). Obesity is a global health epidemic affecting 20% of the world's population and a third of the American population (World Health Statistics, 2015). Approximately 99% of American adults over 20 years old are overweight, and 38% are considered obese (Flegal, Kruszon-Moran, Carroll, Fryar, & Ogden, 2016). A complex array of internal and external factors influences human appetite and the amount and type of food consumed. Internal factors include physiological mechanisms regulating appetite with hormones such as neuropeptide-Y (stimulating eating) and leptin (reducing eating). External factors influencing eating include environmental aspects (like economic factors and food accessibility), social influences (the impact of others), and the palatability of foods (Torres & Tosun, 2007). Additionally, it is a common belief that stress can alter eating patterns (Klatskin, Baldassaro, & Rashid, 2019; Van der Valk, Savas, & Rossum, 2018).

One of the most common psychological problems in overweight women is a defect in body image. Poor body image leads to stress and mediates the relationship between maladaptive thoughts, stress, and anxiety. Dissatisfaction with body image, concerns about body shape and weight, and self-blame for an unsuitable body image are recognized as significant health problems in overweight individuals (Talen & Mann, 2009). Physical appearance is a crucial part of body image, as it provides primary information for others to engage in social interactions with the individual. Therefore, it plays a fundamental role in shaping an individual's beliefs and behaviors (Sarwer & Crerand, 2004, as cited by Naghashpour, 2010); research shows that obesity correlates with low self-esteem, emotional disorders, anxiety, depression, and social isolation (Rogers et al., 2011). Socio-cultural models explaining body image and eating concerns, such as the Tripartite Influence Model (Thompson et al., 1999), have been tested extensively. The Tripartite Influence Model suggests that three sources of influence—media, family, and peers—affect body image concerns through pathways mediated by internalization of ideals and social comparison. In turn, body image concerns lead to eating disorders. This model has received substantial empirical support among teenage girls and young women (Decarvalho et al., 2017; Johnson et al., 2015).

Maladaptive thoughts, another significant and impactful variable, are highly related to anxiety and depression and play a crucial role in research on body image and Bulimia Nervosa. Maladaptive thoughts represent a negative and general self-evaluation associated with feelings of helplessness or passivity. In maladaptive attitudes, the focus is generally on oneself, and due to a mistake or transgression, an individual develops a negative self-evaluation and perceives themselves as a bad person. Therefore, it is not surprising that they become more isolated, lonely, and depressed. According to Beck, maladaptive thoughts are rigid, perfectionist standards used by individuals to judge themselves and others. Since these attitudes are inflexible, extreme, and resistant to change, they are considered maladaptive or unproductive (Davidson, 1998; translated by Dehestani, 2012). Individuals with maladaptive thoughts assess events and personal experiences as stressful (Beard & Hicks, 2015). Mikanti et al. (2017) showed in their research that eating behaviors and obesity are related to maladaptive emotional regulation. Research on the effects of maladaptive thoughts on individuals' psychological status has yielded significant findings; Lopez et al. (2021) showed that maladaptive thoughts and negative cognitive backgrounds exacerbate rumination in patients recovering from illness in quarantine

JARAC Assessment and Research in Applied Counseling
E-ISSN: 3041-8518

during the COVID-19 pandemic. Similarly, Nonya et al. (2021) concluded that individuals hide acute depression symptoms behind obsessive-compulsive disorder and maladaptive thoughts, leading to increased stress and a sense of insecurity. Kinkilaram (2021), examining weekly relationships between obsessive-compulsive disorder symptoms and eating disorders in couples with weekly marital relations, showed that the presence of maladaptive thoughts and obsessive-compulsive disorder exacerbates problems and negative symptoms in their eating disorders and marital relationships. Baikin et al. (2021) also demonstrated that negative and maladaptive thoughts lead to various psychiatric disorders in individuals, with uncontrollable rumination being one of the most maladaptive rumination factors.

Stress can be considered an inherent part of everyday life for everyone. Goldstein (2010) describes stress as a condition where expectations, whether genetically programmed, formed through prior learning, or arising from circumstances, do not align with current or anticipated perceptions of the internal or external environment. This mismatch between what is observed and felt versus what was expected or planned elicits specific compensatory responses. Collectively, these responses are generally referred to as the stress response and are used for mental stress. From an evolutionary perspective, it seems reasonable that stress would affect metabolic processes. The stress system evolved to assist human ancestors in escaping life-threatening situations, which in the distant past often involved considerable metabolic effort; the stress response systems are responsible for releasing glucose into the bloodstream, thereby providing the necessary energy for escape (or fight, if prioritized) from predators and other physical dangers (Lovallo & Buchanan, 2017). Although in modern times, most stressors encountered are psychological (such as arguments with a spouse, difficulties at work, and worries about money) rather than physical, the body still responds as if to physical stressors. In these situations, the body enters a state where excess energy has nowhere to go and is inevitably stored as body fat (Bjorntorp, 2001).

The importance of the present study lies in the fact that obesity is a common public health problem, with its increasing trend becoming a major global health concern. Obese individuals lack the ability to lead a fully active life as obesity negatively impacts their physical, psychological, and social functioning. Due to the lack of sufficient studies in Iran regarding the comparison of risk factors for anxiety, stress, and overeating, it seems crucial to examine the role of these components; moreover, considering that incomplete success in treating Bulimia Nervosa could be due to overlooking or being unaware of another disorder, namely social anxiety, conducting this research appears essential. Therefore, the need to focus on the psychological issues and problems of obese individuals is increasingly felt, which can provide necessary awareness to counselors, psychologists, and doctors in diagnosis and treatment, as well as to families. Thus, body image significantly affects the physical and mental health of women, and dissatisfaction with body image and mental disorders like depression, anxiety, and stress can lead to serious eating disorders and a lack of self-confidence. Considering this point, this research will directly investigate the relationships between maladaptive thoughts and stress; additionally, the impact of body image in the relationship between maladaptive thoughts and stress as a mediating variable will be examined. Therefore, the main question of the current research is whether there is a relationship between maladaptive thoughts and stress mediated by body image in individuals with Bulimia Nervosa.

2. Methods and Materials

2.1. Study Design and Participants

The method of this research is correlational, using path analysis, and the hypothetical model is tested using data obtained from the model variables through path analysis in LISREL software. The statistical population of this research included all women diagnosed with Bulimia Nervosa who visited psychological and counseling centers in Tehran during the first three months of 1401 in the Persian calendar. The study sample consisted of 260 women from these centers, who were selected after explaining the research objectives and obtaining their informed consent, in compliance with the study's inclusion and exclusion criteria (Inclusion criteria included: diagnosis of Bulimia Nervosa based on the opinion of specialists and therapists and confirmed by a structured clinical interview SCID. Age range between 20 to 60 years, education: at least a high school diploma, absence of acute psychiatric disorders based on specialized tests and confirmation by a psychiatrist, no receipt of drug treatment or psychological therapy concurrent with the research. Exclusion criteria included: addiction and dependency on substances or alcohol and being at risk of drug poisoning or drug

JARAC Assessment and Research in Applied Counseling
E-ISSN: 3041-8518

withdrawal. Physical and motor disabilities and specific physical illnesses as diagnosed by a doctor).

2.2. Measures

2.2.1. Maladaptive Thoughts

The Dysfunctional Attitude Scale (DAS-26), developed by Weissman and Beck (1978), is based on Beck's theory regarding the cognitive structure content in depression. This scale consists of four subscales: Achievement-Perfectionism; Need for Approval from Others; Need to Please Others; and Vulnerability-Performance Evaluation, scored on a 7-point Likert scale (ranging from strongly disagree to strongly agree). Higher scores indicate a higher frequency of dysfunctional attitudes. In the study by Ebrahimi and Mousavi (2012), the internal consistency of the 26-item DAS version was found to be 0.92 using Cronbach's alpha, which is considerably robust and preferable to the 40-item version. This score is also more favorable compared to the alpha obtained for shorter versions of DAS (e.g., Chikota & Stiles, 2004, reported 0.85; Witch et al., 2003, reported 0.86; Kaviani et al., 2005, reported 0.75). Given the role of the DAS-26 in predicting cognitive vulnerability and mood and anxiety disorders, its concurrent criterion validity was determined through its correlation with the total scores and subscales of GHQ-28 and diagnoses made by psychiatrists. The correlation between DAS-26 and the predictive criteria was significant at a 0.99 confidence level. These results support findings from Chikota and Stiles (2004) regarding the correlation of DAS scores with BDI-II ($r = 0.47$) and ATQ ($r = 0.47$), as well as findings from Oliver and colleagues (2007) on the correlation of DAS scores with structured interviews ($r = 0.41$), cognitive style questionnaires ($r = 0.51$), and BDI ($r = 0.39$). Additionally, the ability of DAS to predict the likelihood of mood and anxiety disorders (OR = 12.020) is supported.

2.2.2. Body Image

Participants' body image is assessed using the standardized Body Image Concerns Questionnaire by Littleton and colleagues (2005). This questionnaire has 19 items that assess dissatisfaction and concern about one's appearance. Items are rated on a scale from 1 to 5. The score range is between 19 to 95, with higher scores indicating greater dissatisfaction with body image or appearance. The validity of this questionnaire was examined through internal consistency, yielding a Cronbach's alpha of 0.93. Factor analysis of the questionnaire revealed two significant factors: the first factor comprises 12 items addressing dissatisfaction and embarrassment about one's appearance, inspecting, and hiding perceived flaws; the second factor, with seven items, indicates the extent to which concerns about appearance interfere with social functioning. Cronbach's alpha coefficients for the first and second factors were 0.92 and 0.76, respectively, and the correlation coefficient between the two factors was 0.69 (Mohammadi & Sajjadnejad, 2009).

2.2.3. Stress

The 21-DASS, a short version created by Lovibond and Lovibond (1995), is designed to measure the psychological constructs of depression, anxiety, and stress. The original version of this scale had 42 items assessing depression, anxiety, and tension. Depression refers to weak emotions such as hopelessness, lack of energy, and demotivation, while anxiety refers to a mixture of feelings of unrest, restlessness, and agitation. The third factor, stress or tension, emerges through factor analysis. This scale is commonly used by psychologists and psychiatrists and can be administered either through pencil-paper or structured interview (Antony, Bieling, Cox, Enns, & Swinson, 1995). Since its publication in 1995, the questionnaire has been used in various research studies, such as those on early life stress, emotional experiences in adulthood, patients with back pain, work commitments, and spinal injuries (Oei, Lin, & Raylu, 2004). The psychometric properties of DASS-21 have been examined in several studies.

2.3. Data analysis

In the present study, the hypothetical model was tested using data obtained from the model variables and using path analysis. SPSS version 21 and LISREL software were used for data analysis.

3. Findings and Results

Table 1 reports the descriptive indices of the research variables, including mean values, standard deviations, minimums, and maximums.

JARAC Assessment and Research in Applied Counseling
E-ISSN: 3041-8518

Table 1

Descriptive Indices of Research Variables

Variable	Mean	Standard Deviation	Minimum	Maximum
Stress	12.04	0.86	11	14
Fear of Body Image	69.42	5.54	57	80
Dysfunctional Thoughts	114.65	8.67	97	128

As observed in Table 1, the mean stress level is 12.04, fear of body image is 69.42, and dysfunctional thoughts are 114.65. The standard deviations for these variables are 0.86, 5.54, and 8.67, respectively.

Table 2

Correlation Matrix of Research Variables

Variable	Stress (1)	Fear of Body Image (2)	Dysfunctional Thoughts (3)
1. Stress	1		
2. Fear of Body Image	0.426*	1	
3. Dysfunctional Thoughts	0.429*	0.837*	1

*p<0.01

As seen in Table 2, there is a direct relationship between dysfunctional thoughts and stress, with a correlation coefficient of 0.38, which is significant at the 0.01 level. Table 2 also shows a direct relationship between fear of body image and stress, with a correlation coefficient of 0.55, significant at the 0.01 level. Furthermore, there is a direct relationship between dysfunctional thoughts and fear of body image, with a correlation coefficient of 0.84, significant at the 0.01 level.

Table 3

Path Coefficients of Direct Effects of Variables and Significance of Estimated Parameters

Independent Variable	Dependent Variable	Unstandardized Coefficient	Standardized Coefficient	Standard Error	t	P
Dysfunctional Thoughts	Stress	-0.032	-0.32	0.009	-3.538	0.001
Fear of Body Image	Stress	0.109	0.707	0.014	7.814	0.001
Dysfunctional Thoughts	Fear of Body Image	0.523	0.818	0.024	21.833	0.001

The significance of path coefficients between the research variables is further elucidated in Table 3, which reports the unstandardized coefficients, standardized coefficients, standard errors, T-statistics, and significance levels. According to Table 3, the direct path from dysfunctional thoughts to stress is significant (-3.538 for t, -0.32 for β). The direct path from fear of body image to stress is also significant (7.814 for t, 0.707 for β). Additionally, the direct path from dysfunctional thoughts to fear of body image is significant (21.833 for t, 0.818 for β). Subsequent sections of Table 3 report the mediating effect of body image variables in the relationship between dysfunctional thoughts and stress in individuals with Bulimia Nervosa, ascertained through bootstrap method with 2000 sampling processes and a 95% confidence interval.

Table 4

Mediating Effect of Body Image Variables in the Relationship Between Dysfunctional Thoughts and Stress

Independent Variable	Mediating Variable	Dependent Variable	Unstandardized Coefficient	Lower Bound	Upper Bound	P
Dysfunctional Thoughts	Fear of Body Image	Stress	0.057	0.045	0.074	0.001

JARAC Assessment and Research in Applied Counseling
E-ISSN: 3041-8518

Referring to Table 4, it can be observed that the indirect effect of dysfunctional thoughts on stress through fear of body image is significant ($p < 0.05$, $b = 0.057$).

4. Discussion and Conclusion

The current research aimed to explore the relationship between dysfunctional thoughts and stress, mediated by body image, in individuals with Bulimia Nervosa. The findings indicated that the direct path from dysfunctional thoughts to stress is significant. This means that dysfunctional thoughts influence the severity of stress in individuals with Bulimia Nervosa. These results are consistent with studies showing a significant relationship between dysfunctional thoughts and stress; for example, Nonya et al. (2021) demonstrated that individuals hide symptoms of severe depression behind obsessive-compulsive disorder and dysfunctional thoughts, increasing stress and feelings of insecurity. Furthermore, these researchers assert that people consciously and voluntarily attempt to modify and suppress negative and dysfunctional thoughts, which in the short term reduces levels of stress and anxiety. Similarly, Baikin and colleagues (2021) found that adaptive emotions and the control of rumination processes improve stress levels and reduce Bulimia Nervosa in individuals. The findings also showed that the indirect effect of dysfunctional thoughts on stress through fear of body image is significant, suggesting that dysfunctional thoughts impact the emergence and intensity of stress through the influence of body image variables. As noted in the explanation of the third hypothesis, these findings are consistent with the results of studies by Nonya et al. (2021), Baikin, Woo, Rogers, Remio, Lemmens, and Reit (2021).

Other research indicates that one of the most common psychological problems in overweight women is the presence of body image defects. Poor body image leads to stress and plays a mediating role in the relationship between dysfunctional thoughts, stress, and anxiety. Dissatisfaction with body image, concerns about body shape and weight, and self-blame for an unsuitable body image are recognized as significant health issues in overweight individuals (Talen & Mann, 2009), which align with the findings of this study. Waller et al. (2002) conducted a study to investigate cognitive content and core beliefs and eating attitudes in individuals with Bulimia Nervosa, showing different patterns of maladaptive beliefs in individuals with eating disorders. These beliefs and attitudes are usually reflected as self-generated, absolute, and dichotomous thoughts. Greater use of emotion-focused coping responses is associated with increased stress, physical harm, depression, and social dysfunction, whereas problem-focused coping responses more significantly impact individual interactions and social functioning (Mardani & Ahmadi, 2019). Beck states that intrusive thoughts, images, and impulses lead to distress when they are important to the individual and related to dysfunctional thoughts. Research findings have shown that negative and dysfunctional attitudes are associated with several psychological disorders, including obsessive-compulsive disorder, hypochondriasis, and depression (Benzi, 2006).

The results of most studies indicate that, in addition to biological factors, psychological factors such as anxiety, depression, restraint in eating, and dietary habits play a key role in the development of obesity (Ostin, Van Den Heuvel, & Bird, 2014). Some studies have observed a positive relationship between anxiety, depression, and eating behavior (Goripe, Nitka, Schmitt, 2010). Individuals experiencing depressive moods and psychological pressures or having anxiety and worry often use eating as a coping mechanism. Many of these individuals become trapped in a vicious cycle of poor mood states and nutritional issues (Sarafino & Smith, 2014). Considering the findings of this research and the results of related studies, it can be concluded that dysfunctional thoughts directly affect the emergence of stress in individuals with Bulimia Nervosa. Moreover, the mediating effect of body image is significant in this relationship, increasing the severity and occurrence of stress in affected individuals. These findings can form the basis for designing intervention programs aimed at improving body image and reducing dysfunctional thoughts in affected individuals, thereby preventing the creation of a vicious cycle of these interacting factors.

5. Limitations & Suggestions

This study is cross-sectional, drawing conclusions from data collected at a single point in time. Therefore, caution should be exercised in generalizing the results to the population of patients with Bulimia Nervosa. The selection of participants in this research was not completely random, which may impact the generalizability of the findings. The researcher did not have the opportunity to study the effect of demographic variables such as education level and socio-economic status (in terms of impact and creation of

JARAC Assessment and Research in Applied Counseling
E-ISSN: 3041-8518

differences in cognitive functions) on the research variables. The results obtained from this research can be used to design appropriate interventions and preventive plans in patients with Bulimia Nervosa. Psychologists and counselors can utilize the results of this research to develop specific treatment plans for affected individuals and those at risk.

Acknowledgments

We would like to express our appreciation and gratitude to all those who cooperated in carrying out this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethics Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

Funding

This research was carried out independently with personal funding and without the financial support of any governmental or private institution or organization.

Authors' Contributions

Melody Vafaey Moghaddam played a pivotal role in shaping the research design, data collection, and analysis. Kobra Haji Alizadeh brought expertise in path analysis and statistical methods to the study. Eghbal Zarei contributed to data collection and the overall research process. Azita Amirfakhraei aided in data analysis and its interpretation.

References

Austin, A. E., van den Heuvel, C., & Byard, R. W. (2014). Body mass index and suicide. The American journal of forensic medicine and pathology, 35(2), 145-147.

Baeken, C., Wu, G. R., Rogiers, R., Remue, J., Lemmens, G. M., & De Raedt, R. (2021). Cognitive behavioral based group psychotherapy focusing on repetitive negative thinking: Decreased uncontrollability of rumination is related to brain perfusion increases in the left dorsolateral prefrontal cortex. Journal of Psychiatric Research, 136, 281-287.

Beard, J. L., & Hicks, R. (2015). Attachment styles and maladaptive eating practices: perfectionism as a mediator. Journal of Eating Disorders, 3(1), P19.

Benazzi, F. (2006). Borderline personality–bipolar spectrum relationship. Progress in Neuro-Psychopharmacology and Biological Psychiatry, 30(1), 68-74.

Björntorp, P. (2001). Do stress reactions cause abdominal obesity and comorbidities?. Obesity reviews, 2(2), 73-86.

Davison, J., Neim, J., & Kring, S. (2013). Psychopathology based on DSM-5 (Translated by Mehdi Dehstani). Tehran: Viraiesh Publication.

De Carvalho, M. R., Dias, T. R. D. S., Duchesne, M., Nardi, A. E., & Appolinario, J. C. (2017). Virtual reality as a promising strategy in the assessment and treatment of bulimia nervosa and binge eating disorder: a systematic review. Behavioral Sciences, 7(3), 43.

Derouchey, S. A. (2010). A treatment program for obese binge eaters. Dissertation of P.H.D in Clinical Psychology, California School of Professional Psychology, Alameda

Ebrahimi, A., & Moosavi, S. G. (2013). Preparation and validation of the 26-item Dysfunctional Attitude Scale (DAS-26) in terms of factor structure, reliability, and validity in psychiatric outpatients. Journal of Ilam University of Medical Sciences, 21(5), 20-28.

Flegal, K. M., Kruszon-Moran, D., Carroll, M. D., Fryar, C. D., & Ogden, C. L. (2016). Trends in obesity among adults in the United States, 2005 to 2014. Jama, 315(21), 2284-2291.

Gearhardt, A. N., & Hebebrand, J. (2021). The concept of "food addiction" helps inform the understanding of overeating and obesity: Debate Consensus. The American Journal of Clinical Nutrition.

Goldstein, D. S. (2010). Adrenal responses to stress. Cellular and molecular neurobiology, 30(8), 1433-1440.

Gwriepy G, Nitka D, Schmitz N.(2010). The association between obesity and anxiety disorders in the population: A systematic review and meta-analysis. International Journal of Obesity; 34(3): 407- 19

Johnson, P. M., & Kenny, P. J. (2015). Dopamine D2 receptors in addiction-like reward dysfunction and compulsive eating in obese rats. Nature neuroscience, 13(5), 635-641.

Kinkel-Ram, S. S. (2021). Examining Weekly Relationships between Obsessive-Compulsive and Eating Disorder Symptoms (Doctoral dissertation, Miami University).

Kinkel-Ram, S. S., Grunewald, W., Ortiz, S. N., Magee, J. M., & Smith, A. R. (2022). Examining weekly relationships between obsessive-compulsive and eating disorder symptoms. Journal of Affective Disorders, 298, 9-16.

Klatt, I. (2018). Treating the obese-binge eating disorder and food addiction: A model program. Doctor of Psychology in Clinical Psychology, California Institute of Integral Studies.

Klatzkin, R. R., Baldassaro, A., & Rashid, S. (2019). Physiological responses to acute stress and the drive to eat: The impact of perceived life stress. Appetite, 133, 393-399.

Lopez, A., Caffò, A. O., Tinella, L., Di Masi, M. N., & Bosco, A. (2021). Variations in mindfulness associated with the COVID-19 outbreak: Differential effects on cognitive failures, intrusive thoughts and rumination. Applied Psychology: Health and Well-Being, 13(4), 761-780.

Lovallo, W. R., & Buchanan, T. W. (2017). Stress hormones in psychophysiological research: Emotional, behavioral, and cognitive implications.

Maardani, L., & Ahmadi, E. (2019). Structural relationships of dysfunctional thoughts and rumination with symptoms of eating disorder by mediating of avoidance performance. Thoughts and Behavior in Clinical Psychology, 14(53), 47-56.

Micanti, F., Iasevoli, F., Cucciniello, C., Costabile, R., Loiarro, G., Pecoraro, G., ... & Galletta, D. (2017). The relationship between emotional regulation and eating behaviour: a multidimensional analysis of obesity psychopathology. Eating and Weight Disorders-Studies on Anorexia, Bulimia and Obesity, 22(1), 105-115.

Mohammadi, N., & Sajadi-Nejad, M. S. (2009). Evaluation of psychometric characteristics of the Body Image Questionnaire and Body Mass Index Test, dissatisfaction with body image, and self-esteem in adolescent girls. Psychological Studies, 3(1), 83-99.

Naqashpour, M., Shakerinejad, G., Haghighizadeh, M. H., Hajinajaf, S., & Jaroundi, F. (2011). Prevalence of obesity and its relationship with demographic indices in individuals over 18 years old referred to Jundishapur University of Medical Sciences Clinic. Jundishapur Scientific Medical Journal, 10(1), 21-35.

Nishitani, N., Sakakibara, H., & Akiyama, I. (2009). Eating behavior related to obesity and job stress in male Japanese workers. Nutrition, 25(1), 45-50.

Reichenberger, J., Schnepper, R., Arend, A. K., & Blechert, J. (2020). Emotional eating in healthy individuals and patients with an eating disorder: evidence from psychometric, experimental and naturalistic studies. Proceedings of the Nutrition Society, 79(3), 290-299.

Rodgers, R. F., Paxton, S. J., & Chabrol, H. (2011). Effects of parental comments on body dissatisfaction and eating disturbance in young adults: A sociocultural model. Body image, 6(3), 171-177.

Sarafino, E. P., & Smith, T. W. (2014). Health psychology: Biopsychosocial interactions. John Wiley & Sons.

Sinha, R. (2018). Role of addiction and stress neurobiology on food intake and obesity. Biological psychology, 131, 5-13.

Sousa, P. (2008). Body Image and Obesity in Adolescence: A comparative study of socio- Demographic, Psychological and Behavioral Aspects, The Spanish Journal of Psychology, Vol.11, No.2, 551- 563

Talen, M. R., & Mann, M. M. (2009). Obesity and mental health. Primary Care: Clinics in Office Practice, 36(2), 287-305.

Torres, S. J., & Nowson, C. A. (2007). Relationship between stress, eating behavior, and obesity. Nutrition, 23(11-12), 887-894.

van der Valk, E. S., Savas, M., & van Rossum, E. F. (2018). Stress and obesity: are there more susceptible individuals?. Current obesity reports, 7(2), 193-203.

Waller, G., Dickson, C., & Ohanian, V. (2002). Cognitive content in bulimic disorders: Core beliefs and eating attitudes. Eating behaviors, 3(2), 171-178.

JARAC Assessment and Research in Applied Counseling
E-ISSN: 3041-8518