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The Impact of Coping Therapy on the Weight of Women with a Body Mass Index Over 30 Seeking Weight Loss

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ABSTRACT

Objective: This study examines the effectiveness of coping therapy in reducing the weight of women with a body mass index (BMI) over 30 who are seeking weight

Methods and Materials: This quasi-experimental research utilized a pre-test and post-test control group design. The population included all women with a BMI over 30 who sought weight loss at medical and psychological centers in Tehran during 2021. A total of 40 participants were selected using convenience and voluntary sampling methods and were randomly assigned into two groups of 20, comprising an experimental group and a control group. Participants in both groups were weighed, and their BMI was calculated before and after the intervention. The experimental group underwent ten sessions of coping therapy, each lasting 90 minutes. Data were analyzed using SPSS software, version 22.

Results: Analysis of covariance indicated that coping therapy significantly reduced the weight of women with a BMI over 30 who were seeking weight loss (P < 0.001). **Conclusion**: Coping therapy appears to be an effective intervention for weight loss. Through a primary and secondary appraisal process, it modifies inefficient coping mechanisms into effective ones. Specialists can incorporate the findings of this study into their therapeutic and intervention strategies to facilitate weight loss in obese women.

Keywords: Coping therapy, Coping mechanisms, Primary appraisal, Secondary appraisal, Weight loss, Body Mass Index (BMI), women.

1. Introduction

verweight and obesity are among the most common chronic diseases, and it is projected that by 2030, the prevalence of obesity will reach 51%. Besides physical illnesses, being overweight can also be associated with a high prevalence of mental disorders (Förster et al., 2023). The incidence of certain types of disorders, such as mood disorders, including depression, anxiety disorders (Darling et al., 2019), and reduced self-esteem is higher in individuals who are obese or overweight. Numerous studies have shown that obese individuals face various deficiencies and inefficiencies in different areas of life compared to those with average weight, leading to impairments in their quality of life (Martinelli & Chiappedi, 2022). In 2018, the World Health Organization defined a body mass index (BMI) of 25 to 29.9 as overweight and a BMI over 30 as obesity (Archer & Lavie, 2022; Archer et al., 2018). BMI is a critical indicator for assessing the risk of weight-related diseases. An increase in BMI is associated with obesity-related complications such as premature death, high blood pressure, diabetes, cardiovascular diseases, and various types of cancer. Women are more likely than men to become obese; thus, they are more susceptible to the diseases resulting from it (Ashrafi et al., 2022; Fathi & Latifi, 2022).

Generally, there are four main evidence-based approaches to treating overweight and obesity, which include diet therapy, pharmacotherapy, surgery, and coping therapy (Archer & Lavie, 2022; Archer et al., 2018). Furthermore, various psychotherapies have been shown to alleviate the psychological issues associated with obesity and overweight and, in the long term, facilitate weight reduction. One of the psychotherapeutic treatments considered in this study is coping therapy. Based on the theory by Lazarus and Folkman (1984), coping therapy is founded on the notion that coping methods are a set of behavioral and cognitive responses to minimize stressful situations' stresses. Individuals equipped with adaptive coping strategies enhance their mental health through emotional self-regulation, thus improving their psychological condition, which better enables them to handle the issues related to obesity. Therefore, it appears that coping therapy can benefit individuals' health due to its reforming of inefficient coping methods (Folkman & Lazarus, 1980; Herren et al., 2021).

Based on the Emotional Regulation Model, overeating is triggered in response to negative emotions because individuals use various coping mechanisms to avoid or suppress these negative feelings. In the case of obese individuals, food serves as a mechanism for coping with distress and distraction from negative emotional stimuli. Therapeutic coping addresses the deficiency of coping skills by modeling and effectively regulating emotions, thereby reducing stress and behavioral problems (Roshan et al., 2015). Inefficient coping, resulting from an individual's unawareness of coping options, inaccurate cognitive assessments, impulsive selection of coping strategies, excitement, and mismanagement of cognitions, leads to maladaptive behaviors such as overeating (Shajari et al., 2021). According to Folkman and Lazarus (1982), there are two ways to cope with stress: problem-focused coping (directly changing stressors) and emotion-focused coping (primarily altering feelings) (Folkman & Lazarus, 1980). Employing effective (problem-oriented) and ineffective (emotion-oriented) coping styles has distinct outcomes on physical and mental health (Amini et al., 2020).

Research literature has shown that therapeutic coping includes components of third-wave therapies or cognitive therapies such as compassion-focused therapy and Mindfulness. Accordingly, studies related to these intervention protocols are presented here. Ashrafi, et al. (2022) demonstrated in a study that Acceptance and Commitment Therapy (ACT) is effective on body dysmorphia and weight levels in overweight women (Ashrafi et al., 2022). Another study by Fathi and Latifi (2022) showed that body appreciation training and selfhealing education effectively reduce food cravings and selfefficacy related to weight control in overweight women (Fathi & Latifi, 2022). Further research indicated that Cognitive-Behavioral Therapy (CBT) is effective in lifestyle based on self-efficacy and body valuation in obese women (Naserifar et al., 2022). Another study concluded that the immediate effects of web-based intervention modules on physical activity-based coping intervention resulted in weight loss among participants (Martinelli & Chiappedi, 2022). Additional research showed that Cognitive Behavioral Therapy and Mindfulness-Based Stress Reduction (MBSR) (with coping components) led to a further improvement in positive body image and a reduction in body dissatisfaction and the motivation for slimming (Balciuniene et al., 2022).

Obesity and being overweight is a complex disorder that can arise from a multitude of biological, psychological, and social factors. The World Health Organization in 2018 recognized obesity and overweight as one of the top ten common health problems worldwide. Hence, identifying the



factors leading to overweight and obesity is central to any effort to curb it. Although there is valuable evidence showing the genetic, biological, and environmental factors associated with obesity, psychological factors have also been considered a primary component in etiological theories of obesity. Thus, the relationship between obesity and psychological pathology has been the focus of numerous studies over the years (Hilbert et al., 2019). This topic has attracted many researchers, but according to the researchers of this study, no research explicitly focusing on therapeutic coping related to weight loss in women with a BMI over 30 seeking weight reduction was found in the research literature. Therefore, this study is novel and innovative in determining whether therapeutic coping significantly impacts these individuals' weight.

2. Methods and Materials

2.1. Study design and Participant

The current study's methodology was applied quasiexperimentally in design; specifically, a pre-test and posttest with a non-equivalent control group conducted crosssectionally. The statistical population consisted of all women in Tehran with a BMI over 30 who sought weight loss treatments at clinics, doctors' offices, or diet institutions during April and May 2021. Utilizing Cohen's (1988) formula, considering Type I and Type II errors and the expected mean difference between the study groups, the sample size was calculated to be 12 individuals per group, which, with the inclusion of two groups, totaled 40 participants. To prevent attrition among participants throughout the intervention, each group comprised 20 individuals. These 40 participants were selected based on convenience and voluntary participation criteria and were randomly assigned (20 in the experimental group and 20 in the control group) using random replacement. The inclusion criteria were: women seeking weight loss with weights above 30 kilograms, being adults, not suffering from any serious physical or mental health issues, not being pregnant or breastfeeding, consenting to participate in consultation sessions, adhering to necessary protocols related to the COVID-19 pandemic, and not using any weight loss medications or undergoing any other weight loss treatments concurrent with the consultation sessions. The exclusion criteria included discontinuation or withdrawal from participation, non-cooperation, or absence from more than two sessions.

The experimental group was subjected to Agha Yousefi's coping therapy protocol (2001) over ten sessions, each lasting one and a half hours, spread across three months at the Monsef Counseling Center. No intervention was applied to the control group. Ethical considerations in this study included the confidentiality of information. Participants were assured they could withdraw from treatment and sessions whenever they felt unable to continue.

2.2. Measures

2.2.1. BMI

The BMI is calculated by dividing the weight in kilograms by the square of the height in meters. In this study, measurements were taken by the researcher in person; if the consultation was online, individuals calculated and reported their BMI with guidance from the researcher.

2.3. Intervention

2.3.1. Coping Therapy

The intervention protocol is based on Agha Yousefi's (2001) method of coping therapy, a structured approach aimed at helping individuals with a BMI over 30 develop more effective coping mechanisms. This therapy addresses emotional and cognitive factors contributing to weight issues, facilitating behavior modification through guided sessions. The program consists of ten sessions designed to empower participants with the tools to reappraise their cognitive processes, manage stress, and adopt healthier behaviors related to weight loss. The sessions follow a logical progression, from initial assessments to the full implementation of adaptive coping strategies, ensuring participants receive tailored support throughout their therapeutic journey (Amini et al., 2020; Roshan et al., 2015; Shajari et al., 2021).

First Session: Initial Acquaintance and Introduction

In the first session, the counselor establishes rapport with the client, introducing them to the structure and methodology of coping therapy. The session outlines the overall goal of the therapy and sets expectations for the process. The counselor provides a detailed explanation of the therapy's core principles, including how the sessions will focus on improving cognitive and emotional responses to stress and weight-related challenges. This session aims to foster trust and understanding between the client and counselor while preparing the client for active participation in subsequent sessions.

Second Session: Exploring Feelings and Thoughts

During the second session, the client discusses their personal experiences, thoughts, feelings, and actions toward weight reduction. The counselor works closely with the client to review their self-perceptions and emotional responses to obesity. Through reflective discussion, the counselor helps the client identify negative thought patterns and emotional triggers that contribute to ineffective coping behaviors such as emotional eating. This session sets the stage for deeper exploration and modification of cognitive patterns in the following sessions.

Third Session: Defining Body Image and Happiness

The third session focuses on the client's body image and its relationship with their overall happiness. The counselor conducts a descriptive review of the client's body image, guiding them through the empirical correlatives in their life that have shaped their current perceptions. The session includes a critical assessment of the client's reactions to weight-related issues and how these have impacted their mental and emotional well-being. With the counselor's support, the client begins to reassess their adapted responses to obesity, aiming for a healthier relationship with their body.

Fourth Session: Cognitive Assessment and Coping Strategies

In this session, the counselor and client examine the results of the client's cognitive assessment, focusing on the coping strategies they currently employ. The counselor reminds the client to maintain these evaluations and continue to reflect on their thought processes. The session aims to increase the client's awareness of their cognitive responses and how these contribute to their behaviors. By understanding how they think and react to stressors, the client begins to see the potential for altering ineffective coping mechanisms.

Fifth Session: Reviewing Changes in Coping Strategies

Building on the previous session, the fifth session involves a detailed review of the changes the client has made in their cognitive assessments and coping strategies. The client reports on their progress and discusses any challenges faced in applying these new strategies. The counselor provides feedback, reinforcing positive changes while identifying areas that may need further adjustment. This session encourages the client to maintain the momentum of their progress and reinforces the importance of consistent cognitive evaluation.

Sixth Session: Refining Cognitive Evaluations

The sixth session delves deeper into the client's primary and secondary assessments of their reactions to obesity-related issues. The counselor helps the client explore more refined and precise evaluation methods to ensure their cognitive responses become more adaptive. This session focuses on fine-tuning the client's coping mechanisms, allowing for a more nuanced understanding of their emotional and cognitive processes, and ultimately leading to more effective coping strategies.

Seventh Session: Reporting and Refining Coping Skills

In this session, the client presents a report on the outcomes of their refined cognitive evaluations and coping strategies. The counselor and client work together to analyze the effectiveness of these strategies and discuss ways to further enhance them. The session provides an opportunity for continuous feedback and adjustment, ensuring that the client's coping mechanisms are becoming more adaptive and practical in real-life situations.

Eighth Session: Mastery of Adaptive Coping Skills

By the eighth session, the client has learned and practiced adaptive coping skills throughout the previous sessions. The focus now shifts to ensuring the client can apply these skills practically and correctly in various contexts, particularly when facing stressors related to weight management. The counselor provides support and guidance, helping the client solidify their ability to use these coping mechanisms effectively.

Ninth Session: Review and Revision

The ninth session is dedicated to a comprehensive review of all the tasks undertaken during the intervention. The counselor and client collaboratively assess the progress made and discuss any final adjustments needed to ensure the coping strategies are well adapted to the client's needs. The session provides a final opportunity for fine-tuning the approach, ensuring the client is prepared to manage their weight issues independently.

Tenth Session: Conclusion and Farewell

The final session involves summarizing the entire therapeutic process, highlighting the client's progress and the transformation of their coping strategies. The counselor helps the client reflect on their journey and solidify their commitment to maintaining the adaptive skills learned throughout the sessions. The session concludes with a farewell, marking the end of the formal intervention while emphasizing the client's newfound ability to independently manage their weight and emotional well-being.

2.4. Data Analysis

For data analysis, this study employed a quantitative approach using Statistical Package for the Social Sciences (SPSS) version 22. Pre-test and post-test data from both the experimental and control groups were analyzed using analysis of covariance (ANCOVA) to determine the effectiveness of the coping therapy intervention on weight reduction. ANCOVA was chosen to control for potential pre-test differences and to assess the impact of the independent variable (coping therapy) on the dependent variable (weight). Levene's test was conducted to check for homogeneity of variances, ensuring the appropriateness of ANCOVA. Additionally, effect sizes and statistical power were calculated to evaluate the magnitude and significance

of the observed effects. Descriptive statistics, including mean and standard deviation, were used to summarize the demographic and weight-related data.

3. Findings and Results

In this study, the mean and standard deviation of age for women in the experimental group were 42.18 ± 4.14 , and for the control group, it was 43.25 ± 3.89 . The mean and standard deviation of the BMI in the experimental group were 32.84 ± 3.26 ; in the control group, it was 31.76 ± 4.09 . Table 1 presents the descriptive indices for variables related to body image and happiness among women with a high BMI (over 30 kg/m^2) (Table 1).

Table 1

Descriptive Indices for Body Weight of Women with High BMI (>30 kg/m²)

Test	Variable	Experimental Treatment Mean (SD)	Control Mean (SD)		
Pre-test	BMI	32.84 (3.26)	31.76 (4.09)		
Post-test	BMI	26.31 (3.11)	31.59 (3.99)		

Prior to conducting the main analyses, the assumptions required for ANCOVA were thoroughly checked and confirmed. First, the assumption of normality was evaluated using Shapiro-Wilk tests, revealing that the data for both the experimental and control groups were normally distributed (p > 0.05). Second, the homogeneity of regression slopes assumption was tested to ensure that the relationship between the covariate (pre-test weight) and the dependent variable (post-test weight) was consistent across groups; this was met, indicating no significant interaction between the groups and the covariate (p > 0.05). Levene's test was also

used to check for homogeneity of variances, and the results showed that the variances between groups were equal (F = 1.12, p = 0.33), supporting the use of ANCOVA. Additionally, the linearity between covariates and the dependent variable was confirmed, ensuring the appropriateness of the model. With all assumptions met, the ANCOVA was deemed valid for analyzing the effect of coping therapy on weight reduction.

Table 2 provides the results of the analysis of covariance among the study groups (experimental treatment and control groups).

 Table 2

 Results of Analysis of Covariance in Study Groups (Experimental Treatment and Control)

Source of Variation	Variables	df	Mean Squares	F-value	Significance Level (P)	Effect Size	Statistical Power
Pre-test Effect	Weight	1	602.281	1.292	0.448	0.02	0.11
Group Membership	Weight	1	987.263	60.099	0.001	0.69	1

Table 2 above displays the results from the analysis of covariance in the study groups (experimental treatment and control). The findings indicate that the difference between the groups (experimental treatment and control) in weight is statistically significant (P < 0.01). Therefore, concluding a reduction in weight scores in the post-test is acceptable. The effect size of the intervention on weight is 46%. In other words, referring to the means listed in Table 1, participants

in the experimental treatment group had a 46% reduction in weight compared to the control group participants. Thus, the study's null hypothesis is rejected, and the research hypothesis that the experimental treatment significantly affects weight reduction in women is confirmed.



4. Discussion and Conclusion

The objective of the present study was to investigate the impact of coping mechanisms on the weight of women with a BMI above 30. The findings demonstrated that coping mechanisms significantly reduce weight in female applicants with a BMI exceeding 30 kilograms. Therefore, the evidence is sufficient to accept this hypothesis. Based on the results obtained from this hypothesis, it can be stated that the outcomes of this research align with the study by Nasirifar and colleagues (2022) on the efficacy of CBT on a self-efficacy and body value-based lifestyle in women suffering from obesity (Naserifar et al., 2022), the examination by Ashrafi and associates (2022) regarding the effectiveness of ACT on body dysmorphic disorder and the weight of overweight women (Ashrafi et al., 2022), the research by Martinelli and Chiapeddi (2022) on the effectiveness of a web-based intervention for goals and coping interventions based on physical activity leading to weight loss (Martinelli & Chiappedi, 2022), and the study by Balciuniene and colleagues (2022) that CBT and mindfulness-based exercises (with coping components) have led to further improvement in positive body image and reduced body dissatisfaction, and motivation for slimming (Balciuniene et al., 2022).

In explaining this hypothesis, it can be said that individuals who are overweight significantly use passive coping strategies such as self-criticism, unrealistic thoughts, social withdrawal, and unhealthy eating behaviors such as emotional eating and restrictive eating. Negative coping strategies are likely to lead to unhealthy food behaviors and have a higher probability of promoting and maintaining a high BMI. Additionally, in individuals with obesity and overweight, due to the negative emotions stemming from obesity, a slight change in mood occurs, leading to the formation of negative processing. The core of coping mechanisms is facing these negative emotions and the cognitive assessment of these feelings (Amini et al., 2020; Roshan et al., 2015; Shajari et al., 2021).

Coping mechanisms strategies, by creating conscious awareness, revisiting, and altering feelings and emotions, affect the experience of emotions and emotional deprivation. Utilizing mindfulness increases physical self-monitoring and awareness of the roots of obesity, thereby improving physical condition and overall health in individuals who are overweight. Coping mechanisms impact the cognitive system and information processing capacity, freeing an individual from automatic negative thoughts, habits, and

unhealthy eating patterns. Through understanding and reperception, information stemming from emotional states associated with the individual's cognitive system provides weight loss measures in individuals who are overweight (Ajibewa et al., 2021). A study has shown that men who are overweight and have a high BMI utilize ineffective coping strategies. Therefore, differences in the utilization of coping strategies may help explain disparities in obesity and overweight-related health behaviors (Herren et al., 2021).

Emphasizing individual emotions, cognition, and thinking will significantly compensate for emotional restraint. Mindful attention leads to confrontation with negative and avoidant emotions, facilitating the experience of positive mental events. Consequently, in facing and confronting emotions, mindful attention causes a shift in negative mood and negative thinking, reduces the tendency towards worrisome responses, and ultimately leads to pleasant thoughts and emotions in individuals who are overweight. During the coping mechanisms, individuals with overweight learn to accept the distressing experiences encountered in their weight reduction efforts (such as hunger, negative feelings, fatigue from physical activities and exercise, the desire to overeat, etc.) instead of avoiding them. They learn that any action to avoid or control these internal experiences is ineffective or might even exacerbate them. They learn that although eating provides short-term relief and comfort from their pains, in the long term, the intensity and impact of these experiences increase, and controlling them requires efficient effort; for instance, if previously eating was done to escape thoughts and feelings, now they learn to eat for health value. Essentially, they review their primary coping mechanisms. After training and examining why and how these are ineffective, they successfully transform these unsuccessful mechanisms into useful and efficient ones during coping mechanisms sessions. Consequently, in secondary evaluation, individuals, by correcting their previous coping mechanisms, reach the capability for valuable and effective coping in the distressing and harmful situation of obesity. Correcting the initial ineffective coping mechanisms during teaching and analysis sessions of coping mechanisms leads to the formation of efficient coping methods after their secondary evaluation, which can facilitate the desired weight loss outcome.

5. Limitations and Suggestions





This study is limited by its focus solely on women with a BMI over 30 kg/m², potentially restricting the generalizability of its findings to other demographic groups such as men or individuals with lower BMI. Additionally, the sample size was relatively small, and the convenience sampling method may not represent the broader population of overweight individuals seeking weight loss. Another limitation includes the self-reported nature of some data, which might introduce bias. Challenges with scheduling and non-cooperation from participants may have also affected the consistency of the intervention sessions and results.

Future studies should aim to include a more diverse sample, incorporating both male and female participants from different age groups and BMI ranges to explore whether coping therapy yields similar effects across varied populations. Additionally, larger randomized controlled trials could provide more robust evidence of the therapy's effectiveness. Researchers might also explore the long-term impact of coping therapy on weight management to assess its sustainability. Finally, investigating the role of coping therapy in conjunction with other interventions, such as diet or exercise programs, may offer more comprehensive insights into holistic weight loss strategies.

Clinicians and weight management specialists can integrate coping therapy into existing treatment protocols to enhance emotional regulation and coping mechanisms in overweight individuals, particularly women. The therapy can serve as an effective non-invasive intervention for those struggling with emotional eating and ineffective coping strategies, helping reduce the psychological barriers to weight loss. Additionally, public health policies could consider incorporating psychological interventions like coping therapy into broader obesity management programs to address both the physical and mental health aspects of obesity.

Authors' Contributions

Authors contributed equally to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

This study adhered to all ethical principles. Initially, participants were informed about the research's objectives and procedures. All participants provided written informed consent. The study complied with all APA ethical standards and the Helsinki Declaration guidelines. Moreover, the Islamic Azad University, Qom Branch, registered this study under the identifier IR.IAU.QOM.REC.1401.017.

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