



Effectiveness of Mindfulness Therapy in Reducing Guilt, Psychological Distress, and Social Isolation in Overweight Individuals

Mehdieh Pourrostan¹, Ali Akbar Khosravi Hampa^{2*}, Zeinab Ganjali²

¹ M.A., Department of Psychology, Garmsar Branch, Islamic Azad University, Garmsar, Iran

² M.A., Department of Psychology, Qods Branch, Islamic Azad University, Tehran, Iran

* Corresponding author email address: khosravialiakbar3344@gmail.com

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ABSTRACT

This study aimed to examine the structural relationships between attachment styles and social anxiety in adolescents dependent on internet games, considering the mediating role of loneliness. A random sample of 200 adolescents dependent on internet games was selected, and questionnaires on attachment style, social anxiety, and loneliness were completed for them. The results showed that a secure attachment style directly and indirectly leads to reduced social anxiety through decreased loneliness. Additionally, avoidant and anxious-ambivalent attachment styles directly and indirectly lead to increased social anxiety through heightened loneliness. These findings indicate that loneliness plays a significant mediating role in the relationship between attachment styles and social anxiety in adolescents dependent on internet games.

Keywords: *Overweight, Mindfulness Therapy, Guilt, Psychological Distress, Social Isolation*

1. Introduction

Overweight and obesity are recognized as global public health crises associated with numerous physical and psychological consequences. This condition not only increases the risk of chronic diseases such as type 2 diabetes, cardiovascular diseases, and certain types of cancer but also leads to a decrease in quality of life, increased mortality, and psychological problems (1). Overweight individuals often experience feelings of guilt, psychological distress, and

social isolation, which have significant negative impacts on their mental health and social relationships (1-3).

Guilt is an emotional response to behaviors or thoughts that an individual considers undesirable or unacceptable. In overweight individuals, this feeling can stem from unhealthy eating behaviors, failure to adhere to weight loss programs, and repeated experiences of failure in weight control. Persistent guilt can lead to self-blame and reduced self-esteem, ultimately contributing to depression and anxiety. Research shows that guilt is a critical factor in maintaining

and reinforcing undesirable behaviors, creating a cycle of unhealthy eating behaviors and weight gain (4).

Psychological distress, including feelings such as anxiety and depression, is very common among overweight individuals. These individuals face more psychological issues like anxiety, depression, and stress than the general population (5). These psychological problems can decrease the motivation and energy necessary for engaging in physical activities and adhering to healthy diets, complicating weight management. Studies have shown a bidirectional relationship between weight gain and psychological distress, where each can exacerbate the other (6, 7).

Social isolation is another issue that overweight individuals face. Due to social discrimination and negative stereotypes about overweight, these individuals often withdraw from social interactions (2, 8). This isolation can reduce social support, increase feelings of loneliness, and ultimately exacerbate psychological distress. Research indicates that social isolation leads to not only psychological problems but also a reduction in motivation to pursue personal health goals (3).

In addressing these challenges, various psychological treatments have been proposed, including mindfulness-based therapy. Mindfulness, as a therapeutic approach, focuses on the present moment and non-judgmental acceptance of internal and external experiences (9). This therapeutic approach can have positive effects on the psychological problems of overweight individuals by reducing stress, improving emotional regulation, and increasing self-acceptance. Research has shown that mindfulness can help reduce negative emotional responses and improve quality of life (10).

Recent research indicates that mindfulness-based therapy can effectively reduce guilt and psychological distress and improve social relationships (11). This therapy helps individuals change their negative attitudes and behave more kindly towards themselves and others by enhancing emotional regulation skills, reducing stress responses, and increasing self-acceptance (Baer, 2003). Numerous studies have shown that mindfulness-based interventions can have significant positive effects on weight reduction and improving health-related behaviors (9, 10, 12-15).

This research investigates the effectiveness of mindfulness-based therapy in reducing guilt, psychological distress, and social isolation in overweight individuals. Given the high prevalence of overweight and its associated psychological problems, understanding and applying effective therapeutic methods to improve the psychological and social status of these individuals is of great importance (Lavender et al., 2017). It is expected that the results of this research will contribute to the development of effective intervention programs for reducing psychological problems and improving the quality of life for overweight individuals.

2. Methods and Materials

2.1. Study Design and Participants

The research method of this study is semi-experimental with a pre-test, post-test, and follow-up design. The study population included overweight individuals (BMI between 25 and 30) aged 18 to 40 years in Tehran. Simple random sampling was conducted among individuals visiting nutrition and mental health clinics. To increase the generalizability of the results, an effort was made to select samples from various genders and socio-economic classes. Inclusion criteria included having a BMI between 25 and 30 (overweight), age between 18 and 40 years, written consent to participate in the study, absence of severe physical or psychological illnesses preventing participation in the study, and the ability to read and write to complete the questionnaires. Exclusion criteria included not completing the questionnaires or sessions fully, voluntary withdrawal from the study, and occurrence of severe physical or psychological illness during the study period.

2.2. Measures

2.2.1. Guilt

This questionnaire consists of 45 questions measuring guilt in three dimensions: personal guilt, behavioral guilt, and thought-related guilt. Responses are rated on a 5-point Likert scale (1=Strongly Disagree, 5=Strongly Agree). The validity of this questionnaire has been confirmed through confirmatory factor analysis, and results indicate that its three-dimensional structure is acceptable (16). Its reliability, calculated using Cronbach's alpha for the total scale and its

different dimensions, ranges between 0.78 to 0.88, indicating high reliability.

2.2.2. *Psychological Distress*

This tool consists of 10 questions measuring psychological distress over the past 4 weeks. Responses are rated on a 5-point Likert scale (1=Never, 5=Always). The validity of this questionnaire has been confirmed through confirmatory factor analysis and correlation with other anxiety and depression measurement tools, showing high validity (17). Its reliability, calculated using Cronbach's alpha, is 0.93 for the total scale, indicating very high reliability.

2.2.3. *Loneliness*

One of the most widely used tools for measuring feelings of loneliness and social isolation, designed by Russell and colleagues in 1980. This questionnaire consists of 20 questions evaluating the degree of loneliness and lack of social connection. Responses are recorded on a 4-point Likert scale (1=Never, 4=Often). The validity of this questionnaire has been confirmed through confirmatory factor analysis and correlation with other scales related to loneliness and social support, showing high validity (18). Its reliability, calculated using Cronbach's alpha, is 0.89 for the total scale, indicating acceptable reliability.

2.3. *Intervention*

2.3.1. *Mindfulness-Based Therapy*

The mindfulness-based intervention was conducted over 8 weeks with weekly 90-minute group sessions led by an experienced mindfulness therapist. The session content included various mindfulness exercises such as mindful breathing, body scan, sitting meditation, and practices of acceptance and non-judgment (9).

Session 1: Introduction and familiarization with mindfulness: Introduction of basic mindfulness concepts and research goals, implementation of mindful breathing exercises, and discussion of participants' experiences.

Session 2: Focus on the present moment: Training and practice of body scan, examining the impact of focusing on the present moment on stress reduction.

Session 3: Acceptance and non-judgment: Practice of accepting thoughts and feelings without judgment, discussion of experiences and challenges in acceptance.

Session 4: Neutral observation: Training and practice of neutral observation of thoughts and feelings, conducting sitting meditation and discussing experiences.

Session 5: Emotional regulation: Emotional regulation exercises using mindfulness techniques, examining the impact of these exercises on reducing psychological distress.

Session 6: Self-awareness and self-acceptance: Exercises in self-awareness and self-acceptance, discussion on the role of self-acceptance in reducing guilt.

Session 7: Social relationships: Examining the impact of mindfulness on improving social relationships, exercises related to enhancing social skills.

Session 8: Summary and evaluation: Review and summary of concepts and exercises from previous sessions, evaluating the intervention's impacts, and planning for continued practice in the future.

2.4. *Data Analysis*

Ethical considerations in this study included that participation was entirely voluntary. Before starting the project, participants were familiarized with the project's specifications and regulations. Participants' attitudes and beliefs were respected. Members of the experimental and control groups were allowed to withdraw from the study at any stage. Additionally, control group members could receive the intervention applied to the experimental group in similar therapeutic sessions if interested after the project ended. All documents, questionnaires, and records were confidential and accessible only to the researchers. Written informed consent was obtained from all volunteers. Descriptive statistics for each research variable were calculated. In inferential statistics, repeated measures analysis of variance (ANOVA) was used with SPSS-22 software.

3. **Findings and Results**

The mean age (standard deviation) of participants in the experimental group was 38.5 (8.7) years, and in the control group, it was 36.9 (7.7) years. The minimum and maximum ages in the experimental group were 26 and 43 years,

respectively, while in the control group, they were 27 and 42 years.

Table 1

Descriptive Statistics for Research Variables

| Variable | Group | N | Pre-Test Mean (SD) | Post-Test Mean (SD) | Follow-Up Mean (SD) |
|------------------------|--------------|----|--------------------|---------------------|---------------------|
| Guilt | Experimental | 15 | 89.67 (24.71) | 78.53 (20.50) | 79.80 (19.85) |
| | Control | 15 | 90.53 (25.13) | 90.07 (23.26) | 89.93 (23.68) |
| Psychological Distress | Experimental | 15 | 38.33 (7.10) | 30.80 (5.45) | 31.93 (5.63) |
| | Control | 15 | 37.60 (6.94) | 37.80 (6.56) | 37.73 (6.32) |
| Social Isolation | Experimental | 15 | 59.30 (10.66) | 45.05 (8.33) | 44.20 (8.97) |
| | Control | 15 | 60.40 (11.04) | 59.10 (11.02) | 58.55 (5.26) |

To examine the significance of differences in guilt, psychological distress, and social isolation scores between the experimental and control groups, repeated measures analysis of variance (ANOVA) was used. The results of the Kolmogorov-Smirnov test confirmed the normality of the data for the research variables. Levene's test for homogeneity of variances indicated that the variances of the research variables were equal across groups in the pre-test, post-test, and follow-up stages. Additionally, Mauchly's test of sphericity showed a violation of the assumption of sphericity for the covariance matrix among groups, necessitating the use of the Greenhouse-Geisser correction.

The results of the repeated measures multivariate ANOVA for the studied variables of guilt, psychological distress, and social isolation showed that the between-subject effect (group) was significant, indicating that at least one group differed from the others in at least one of the variables of guilt, psychological distress, and social isolation. The within-subject effect (time) for the research variables was also significant, meaning that over time, from pre-test to follow-up, there was a change in at least one of the variables' means.

Table 2

Repeated Measures ANOVA for Comparing Pre-Test, Post-Test, and Follow-Up on Guilt, Psychological Distress, and Social Isolation in Experimental and Control Groups

| Variable | Source of Effect | Sum of Squares | df | Mean Square | F | p | Partial Eta Squared |
|------------------------|------------------|----------------|------|-------------|--------|------|---------------------|
| Guilt | Time | 119.46 | 1.13 | 92.71 | 148.15 | .001 | .84 |
| | Time * Group | 93.95 | 2.26 | 72.91 | 116.52 | .001 | .80 |
| | Group | 1788.13 | 1 | 1788.13 | 59.45 | .001 | .51 |
| Psychological Distress | Time | 400.08 | 1.13 | 296.70 | 261.46 | .001 | .90 |
| | Time * Group | 277.06 | 2.26 | 205.46 | 181.07 | .001 | .86 |
| | Group | 1704.39 | 1 | 1704.39 | 144.42 | .001 | .42 |
| Social Isolation | Time | 87.62 | 2 | 43.81 | 164.78 | .001 | .85 |
| | Time * Group | 37.48 | 2 | 18.74 | 70.50 | .001 | .71 |
| | Group | 131.61 | 1 | 131.61 | 15.25 | .001 | .24 |

The results in Table 2 indicate that the ANOVA for the within-group factor (time) is significant, and the between-group factor is also significant. These results mean that the effect of time, considering the group effect, is significant on

its own. Additionally, the interaction between group and time is significant. Bonferroni post-hoc tests were also used for pairwise comparisons of the groups.

Table 3

Bonferroni Post-Hoc Test Results for Comparing Guilt, Psychological Distress, and Social Isolation

| Variable | Stage | Stage | Mean Difference | p |
|------------------------|-----------|-----------|-----------------|------|
| Guilt | Pre-Test | Post-Test | 11.14 | .001 |
| | | Follow-Up | 11.27 | .001 |
| | Post-Test | Follow-Up | .19 | .657 |
| Psychological Distress | Pre-Test | Post-Test | 8.47 | .001 |
| | | Follow-Up | 7.40 | .001 |
| | Post-Test | Follow-Up | .07 | .896 |
| Social Isolation | Pre-Test | Post-Test | 14.56 | .001 |
| | | Follow-Up | 14.98 | .001 |
| | Post-Test | Follow-Up | .46 | .547 |

The results in Table 3 show that guilt, psychological distress, and social isolation in the experimental group were lower in the post-test compared to the pre-test ($p < .01$). Additionally, the results indicated that guilt, psychological distress, and social isolation in the experimental group differed between the pre-test and post-test stages ($p < .01$). However, there were no significant differences in guilt, psychological distress, and social isolation between the post-test and follow-up stages.

4. Discussion and Conclusion

The aim of this study was to determine the effectiveness of mindfulness-based therapy in reducing guilt, psychological distress, and social isolation in overweight individuals. The results showed that mindfulness-based therapy significantly reduced guilt in overweight individuals. This reduction can be attributed to the increase in self-awareness and non-judgmental acceptance of thoughts and feelings resulting from this type of therapy. Through mindfulness exercises, individuals learn to accept their thoughts and feelings without criticism and judgment, which can lead to a reduction in guilt (19). Previous studies have also confirmed the positive effects of mindfulness on reducing guilt. For example, a study conducted by Jazaieri et al. (2014) showed that mindfulness can reduce guilt and increase self-acceptance. However, some studies did not achieve similar results (8). For example, a study by Bishop et al. (2012) showed that the effects of mindfulness on reducing guilt might depend on factors such as the amount of practice and the individual's commitment to the therapeutic program (12).

The results of this study also showed that mindfulness-based therapy significantly reduced psychological distress in

overweight individuals. This effect can be attributed to mindfulness exercises that help individuals better cope with daily stressors and anxieties and control their reactions to them. Mindful breathing and sitting meditation exercises are among the practices that can help reduce anxiety and stress levels (13). Numerous studies have confirmed the positive effects of mindfulness on reducing psychological distress. For example, a study by Hofmann et al. (2010) showed that mindfulness can significantly reduce anxiety and depression levels. However, some other studies have found conflicting results (14). For example, a study by Kuyken et al. (2008) showed that the effects of mindfulness on psychological distress might vary due to individual differences and the level of commitment to the therapeutic program (15).

The results of this study showed that mindfulness-based therapy significantly reduced social isolation in overweight individuals. This result may be due to increased self-acceptance and improved communication skills resulting from mindfulness exercises. By non-judgmental acceptance and increased awareness of their feelings, individuals may develop better abilities to establish healthy social relationships (20). Previous studies have also confirmed the positive effects of mindfulness on reducing social isolation. For example, a study conducted by Cacioppo et al. (2015) showed that mindfulness can improve social connections and reduce feelings of loneliness (6). However, some studies, such as a study by Laursen et al. (2007), showed that the effects of mindfulness on social isolation might vary due to factors such as the individual's social environment and the amount of practice (21).

The sample size of this study might not be sufficient to generalize the results to a larger population. Future studies can be conducted with larger and more diverse samples to

provide more generalizable results. The 8-week intervention period might not be sufficient for some participants. Examining the long-term effects of mindfulness requires longer periods. Environmental and individual factors such as social support, individual differences in response to therapy, and the amount of mindfulness practice may influence the results. Future research should further investigate these factors. It is suggested that the intervention period be extended beyond 8 weeks to more accurately examine the long-term effects of mindfulness on the studied variables. Combining quantitative and qualitative methods can provide a better understanding of participants' experiences and the reasons for the success or failure of the intervention. In-depth interviews with participants can provide valuable information. Future studies can examine the various effects of mindfulness practices on different psychological and social variables to determine which practices are most effective.

Authors' Contributions

M.P. conceptualized the study, designed the research methodology, and supervised the data collection process. A.A.K.H., the corresponding author, conducted the data analysis using structural equation modeling, interpreted the results, and led the drafting and revising of the manuscript. Z.G. assisted with the recruitment of participants, supported the administration of the questionnaires, and contributed to the literature review. All authors participated in discussing the findings, critically reviewed the manuscript for important intellectual content, and approved the final version for publication.

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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Ethics Considerations

The study placed a high emphasis on ethical considerations. Informed consent obtained from all participants, ensuring they are fully aware of the nature of the study and their role in it. Confidentiality strictly maintained, with data anonymized to protect individual privacy. The study adhered to the ethical guidelines for research with human subjects as outlined in the Declaration of Helsinki.

References

1. Bukhari S. Obesity: The Association between Obesity and Quality of Life: The Chicago School of Professional Psychology; 2022.
2. Puhl RM, Heuer CA. Obesity Stigma: Important Considerations for Public Health. *American Journal of Public Health*. 2010;100(6):1019-28. [PMID: 20075322] [PMCID: PMC2866597] [DOI]
3. Vartanian LR, Novak SA. Internalized societal attitudes moderate the impact of weight stigma on avoidance of exercise. *Obesity*. 2011;19(4):757-62. [PMID: 20948515] [DOI]
4. Barnes CL. Chronic Pain and PTSD: Guilt and Shame as Moderators: Palo Alto University; 2022.
5. Pearson CM, Zapolski TC, Smith GT. A longitudinal test of impulsivity and depression pathways to early binge eating onset. *International Journal of Eating Disorders*. 2015;48(2):230-7. [PMID: 24659534] [PMCID: PMC5321068] [DOI]
6. Cacioppo S, Grippo AJ, London S, Goossens L, Cacioppo JT. Loneliness: Clinical Import and Interventions. *Perspectives on Psychological Science*. 2015;10(2):238-49. [PMID: 25866548] [PMCID: PMC4391342] [DOI]
7. Kessler RC, Andrews G, Colpe LJ, Hiripi E, Mroczek DK, Normand SLT, et al. Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological Medicine*. 2002;32(6):959-76. [PMID: 12214795] [DOI]
8. Jazaieri H, Jinpa GT, McGonigal K, Rosenberg EL, Finkelstein J, Simon-Thomas E, et al. Enhancing Compassion: A Randomized Controlled Trial of a Compassion Cultivation Training Program. *Journal of Happiness Studies*. 2013;14(4):1113-26. [DOI]
9. Kabat-Zinn J. Mindfulness-Based Stress Reduction Program.
10. Khoury B, Lecomte T, Fortin G, Masse M, Therien P, Bouchard V, et al. Mindfulness-based therapy: A comprehensive meta-analysis. *Clinical Psychology Review*. 2013;33(6):763-71. [PMID: 23796855] [DOI]

11. Goldin PR, Gross JJ. Effects of mindfulness-based stress reduction (MBSR) on emotion regulation in social anxiety disorder. *Emotion*. 2010;10(1):83. [PMID: 20141305] [PMCID: PMC4203918]
12. Bishop SR, Lau M, Shapiro S, Carlson L, Anderson ND, Carmody J, et al. Mindfulness: A proposed operational definition. *Clinical psychology: Science and practice*. 2004;11(3):230.
13. Grossman P, Niemann L, Schmidt S, Walach H. Mindfulness-based stress reduction and health benefits: A meta-analysis. *Journal of Psychosomatic Research*. 2004;57(1):35-43. [PMID: 15256293] [DOI]
14. Hofmann SG, Sawyer AT, Witt AA, Oh D. The effect of mindfulness-based therapy on anxiety and depression: A meta-analytic review. *Journal of consulting and clinical psychology*. 2010;78(2):169. [PMID: 20350028] [PMCID: PMC2848393]
15. Kuyken W, Byford S, Taylor RS, Watkins E, Holden E, White K, et al. Mindfulness-based cognitive therapy to prevent relapse in recurrent depression. *Journal of consulting and clinical psychology*. 2008;76(6):966. [PMID: 19045965] [DOI]
16. Yousefi T, Fallah MH, Vaziri S, Afshani AR. Explaining Parent-Adolescent Conflict Consequence from a Parent's Viewpoint: A Qualitative Study. *Middle Eastern Journal of Disability Studies*. 2021;11(0):95-.
17. Bakhshi A, Normiq KN, Hossein Zahi H, Zare Tajabadi M. The Effectiveness of Spiritual therapy on psychological Hardiness and psychological Distress of Students. *Islamic Lifestyle Centered on Health*. 2023;7(2):359-66.
18. Ahmadboukani S, Ghamarigivi H, Kiani A, Rezaeisharif A. Childhood Experiences and Depressive Symptoms- Suicidal tendencies: A Mediating Role of Rumination and Thwarted Belongingness. *Journal of Police Medicine*. 2022;11(1):1-14. [DOI]
19. Shapiro SL, Carlson LE, Astin JA, Freedman B. Mechanisms of mindfulness. *Journal of Clinical Psychology*. 2006;62(3):373-86. [PMID: 16385481] [DOI]
20. Creswell JD, Pacilio LE, Lindsay EK, Brown KW. Brief mindfulness meditation training alters psychological and neuroendocrine responses to social evaluative stress. *Psychoneuroendocrinology*. 2014;44:1-12. [PMID: 24767614]
21. Laursen B, Hafen CA, Kerr M, Stattin H. Friend influence over adolescent problem behaviors as a function of relative peer acceptance: to be liked is to be emulated. *Journal of abnormal psychology*. 2012;121(1):88. [PMID: 21823759] [PMCID: PMC3303164] [DOI]