



RESEARCH ARTICLE

The mediator role of experiential avoidance in examining the relationship between weight self-stigma and emotional eating in overweight and obese individuals

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ABSTRACT

Objective: This study examines the mediating role of experiential avoidance in the relationship between weight-related self-stigma and emotional eating among overweight and obese individuals.

Method: The study included 200 overweight and obese individuals. Participants completed a questionnaire consisting of a sociodemographic information form, Emotional Eater Questionnaire (EEQ), the Weight Self-Stigma Questionnaire (WSSQ), and the Multidimensional Experiential Avoidance Questionnaire (MEAQ). The data obtained were analyzed using IBM SPSS and AMOS software packages.

Results: The results indicated that higher levels of weight-related self-stigma were significantly associated with increased emotional eating. The procrastination, distraction/suppression, and repression/denial subdimensions of multidimensional experiential avoidance had a significant mediating effect in this relationship. However, no significant mediation effect was observed for the behavioral avoidance, distress aversion, and distress endurance subdimensions.

Conclusion: The findings indicate that emotional eating behavior increases as levels of weight-related self-stigma rise among individuals with overweight and obesity. In this relationship, cognitive dimensions of experiential avoidance play a more prominent role than behavioral components. Furthermore, no significant mediating effects were found for dimensions associated with long-term regulatory processes, such as distress aversion and distress tolerance, which may be more closely linked to broader aspects of psychological functioning. A multidimensional assessment of experiential avoidance may therefore support the development of more targeted and personalized interventions for individuals with overweight and obesity.

Keywords: Emotional eating, obesity, stigma, weight self-stigma, experiential avoidance

How to cite this article: Gulacan D, Sevincer GM, Kilincel O. The mediator role of experiential avoidance in examining the relationship between weight self-stigma and emotional eating in overweight and obese individuals. Dusunen Adam J Psychiatr Neurol Sci 2025;38:204-211.

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Received: February 04, 2025; **Revised:** August 15, 2025; **Accepted:** September 27, 2025

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INTRODUCTION

Obesity is a disease characterized by excessive fat accumulation due to an impaired energy balance in the body (1). It has a high prevalence across all societies and is gradually becoming a global epidemic. According to the World Health Organization's (WHO) 2022 report, more than 2.5 billion (43%) adults aged 18 years and older worldwide are overweight, and more than 890 million (16%) of them are obese. Such a large-scale public health problem has serious negative consequences both individually and socially (2). This disease not only reduces the quality of life and functionality of individuals but also causes economic problems (3). Therefore, studies aimed at determining the factors that influence obesity will make a significant contribution to the field.

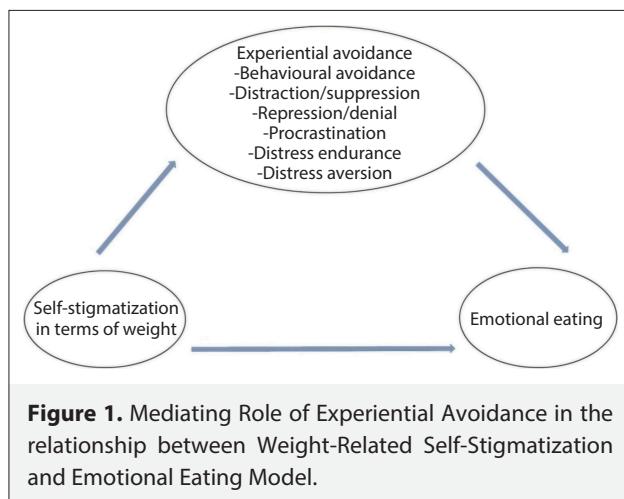
Stigmatization is one of the main negative experiences faced by overweight and obese individuals (4). Weight self-stigma (WSS) affects people across all weight ranges. However, the rates of overweight and obese individuals who internalize the messages they are exposed to and stigmatize themselves based on their weight are considerably higher compared to other groups (5). Contrary to common assumptions, stigmatization has been shown to undermine obesity treatment efforts and contribute to significant declines in both psychological and physical well-being (6). Studies involving overweight and obese individuals have reported that those who internalize weight-related stigma are less likely to diet and exercise and are more prone to binge eating behavior (7). Similarly, findings indicate reduced emotional awareness, disrupted emotion regulation (ER) strategies (e.g., lower cognitive reappraisal and acceptance, higher suppression), and increased emotional eating tendencies among individuals with obesity (8). These patterns emphasize the need to address emotional eating (EE), a factor widely recognized as a major obstacle to effective treatment.

Emotional eating is one of the most frequently used concepts to describe the psychological mechanisms underlying obesity (9). Escape theory defines emotional eating as the tendency to engage in binge eating behavior to reduce awareness, distract attention, or avoid negative stimuli. In other words, eating is considered a coping mechanism to escape from negative life experiences (10). Individuals with emotional eating tendencies often attribute greater psychological significance to food than its actual nutritional value. For them, food may function as a

source of comfort, a reward, or a tool to control their emotions (11). Therefore, emotional eaters tend to consume large amounts of high-calorie food in a short time, in parallel with emotional changes, negative affect, and lifestyle factors. Studies have reported that emotional eating behavior is observed in more than 40% of obese individuals (9).

In recent years, there has been increasing evidence that experiential avoidance (EA) plays a mediating role in the relationship between weight-related self-stigma and emotional eating. EA refers to an individual's effort to avoid or control negative internal experiences (emotions, thoughts, bodily sensations) (12). However, there is no consensus in the literature regarding the nature of this construct. While some studies adopt a unidimensional approach, others focus on a multidimensional structure. These studies define six subdimensions of the concept (behavioral avoidance, distress aversion, procrastination, distraction/suppression, repression/denial, and distress endurance) and emphasize that the subcomponents of experiential avoidance may have unique clinical outcomes. Similarly, it has been suggested that a unidimensional approach to the construct may be insufficient for clinical interpretation, and that evaluating the subdimensions separately offers important contributions to both theoretical explanations and the determination of intervention goals (12). On the other hand, experiential avoidance is an important application area within different therapeutic approaches. Psychodynamic therapy focuses on the defensive relegation of painful or threatening material to the unconscious, whereas cognitive-behavioral approaches target emotional and experiential avoidance through structured interventions. Current approaches such as acceptance- and mindfulness-based Cognitive Behavioral Therapies (CBTs) (13), Dialectical Behavior Therapy, (14) and Acceptance and Commitment Therapy (ACT) (15) also underline the critical importance of this transdiagnostic concept. Therefore, a multidimensional assessment is important to identify specific areas of EA related to EE behavior in overweight and obese individuals and to design clinical interventions in a targeted and individualized manner.

The aim of this study was to examine the mediating role of EA in the relationship between WSS and EE among overweight and obese individuals. First, it was hypothesized that higher levels of WSS would be positively associated with increased EE.



Second, specific dimensions of EA were hypothesized to mediate this relationship. Figure 1 shows the mediation relationship between the variables.

METHODS

The study was conducted in accordance with the Declaration of Helsinki and received approval from the Istanbul Gelisim University Ethics Committee (24.12.2021, protocol no. 2021-40). Data collection was carried out through face-to-face administration, with informed consent obtained and voluntary participation ensured.

Participants

The inclusion criteria for the current study were: (1) participants were 18 years of age or older, and (2) had a Body Mass Index (BMI) of 25 kg/m^2 or higher (classified as overweight or obese). Exclusion criteria were: (1) pregnancy, (2) current or past psychiatric diagnosis or psychological/psychiatric treatment, and (3) incomplete or inconsistent responses. Individuals were screened via self-report and clinical interview to exclude psychiatric diagnoses. Participants were recruited from the outpatient clinics of Inönü University Turgut Ozal Medical Center and voluntarily participated in the study. Data were collected through self-report questionnaires administered in a face-to-face format. Power analysis was performed using G*Power software to determine the sample size. Based on the effect size estimates reported in Palmeira et al. (16) (2018), a minimum of 182 participants was required to achieve 95% statistical power with a 5% Type I error rate. The final sample was set at 200 participants to reduce the risk of data loss and to ensure sufficient power for the analyses (16).

Clinical Questionnaires

Weight Self-Stigma Questionnaire (WSSQ)

The WSSQ is used to assess self-stigmatization levels related to weight among overweight and obese individuals (17). Higher total scores indicate greater levels of self-stigmatization related to weight. The scale has two subdimensions: self-evaluation and fear of stigmatization. The scale has a minimum score of 12 and a maximum score of 60. The Cronbach's α value was 0.83 in the Turkish validation study (18) and 0.91 in the current research.

Emotional Eater Questionnaire (EEQ)

The EEQ is used to assess unhealthy eating attitudes associated with the emotions of overweight and obese individuals (19). It has three subdimensions: inability to curb food cravings, food types, and guilt. An increase in the total score indicates an increase in emotional eating behavior. The scale has a minimum score of 0 and a maximum score of 30. The Turkish validity and reliability study of the scale was conducted by Arslantas et al. (20). The Cronbach's α value of the Turkish form was found to be 0.81 for the inability to prevent food cravings subdimension, 0.57 for the type of food subdimension, 0.64 for the guilt subdimension, and 0.84 for the whole scale (20), while the total scale showed $\alpha=0.89$ in the present study.

Multidimensional Experiential Avoidance Questionnaire (MEAQ)

The MEAQ is used to determine the extent of attempts to control or change negative emotions, thoughts, and internal experiences (12). It has six dimensions: behavioral avoidance, distress aversion, procrastination, distraction/suppression, repression/denial, and distress endurance. Over time, to facilitate its use in clinical practice, a 30-item short form was developed in parallel with the subdimensions of the original scale. In the Turkish version, subscale reliabilities ranged from 0.76 to 0.87. In the present study, Cronbach's α values were 0.89 for behavioral avoidance, 0.88 for distress aversion, 0.78 for procrastination, 0.91 for distraction/suppression, 0.86 for repression/denial, and 0.93 for distress endurance.

Statistical Analysis

IBM SPSS Statistics 25.0 (SPSS Inc., Chicago, IL) and AMOS v21 programs were used for the evaluation of the research data. Reliability analyses were conducted for the scales used in the study, and Cronbach's alpha coefficients were taken into account. In the analysis of the data, descriptive categorical variables were

Table 1: Assumption testing for the structural model: Autocorrelation and multicollinearity results

Model	Variable	Durbin-Watson	Tolerance	VIF
EE	WSSQ		0.44	2.29
	BA		0.46	2.17
	DA		0.38	2.63
	PR	1.95	0.51	1.98
	DS		0.59	1.70
	RD		0.81	1.24
	DE		0.72	1.39

WSSQ: Weight Self-Stigma Questionnaire; BA: Behavioral avoidance; EE: Emotional eating; DS: Distraction/suppression; RD: Repression/denial; PR: Procrastination; DE: Distress endurance; DA: Distress aversion.

expressed as number (n) and percentage (%), while quantitative variables were expressed as mean, standard deviation, skewness, and kurtosis values. Before conducting Structural Equation Modeling (SEM), assumptions regarding autocorrelation and multicollinearity were assessed. The Durbin-Watson statistic was examined to evaluate autocorrelation between residuals, and multicollinearity was assessed using Tolerance and Variance Inflation Factor (VIF) values. These results are reported in Table 1.

RESULTS

The dataset obtained from 200 participants was analyzed, and no missing values or univariate outliers were detected. Skewness and kurtosis statistics were calculated to evaluate the normality assumption of the total and subscale scores of the EEQ, WSSQ, and MEAQ. The fact that the skewness and kurtosis values of all variables were within the acceptable range of -1.5 to +1.5 indicates that the data were approximately normally distributed. In line with

these findings, parametric statistical tests were used in the subsequent analyses. Descriptive statistics and correlation coefficients between variables are reported in Table 2.

Additionally, prior to conducting the Structural Equation Modeling, Durbin-Watson, tolerance, and VIF values were examined to assess potential violations of model assumptions. The results indicated no issues of autocorrelation or multicollinearity among the variables. These values are presented in Table 1.

Sample Characteristics

According to the collected data, 65.5% of the participants were female (n=131) and 34.5% were male (n=69); 38% (n=76) experienced obesity in childhood, and 51% (n=102) had a family history of obesity. The mean age was 28.52 ± 7.83 years, with a minimum of 18 and a maximum of 54 years. The mean height was 169.54 ± 10.05 (range: 150–203 cm), and the mean weight was 88.75 ± 17.5 (range: 58–134).

Mediation Analysis

In the study, to analyze the mediating effect of multidimensional experiential avoidance on the relationship between weight self-stigma and emotional eating, the relationship between the external latent variable weight self-stigma (WSSQ total) and the internal latent variable emotional eating (EEQ total) was first evaluated. Then, the mediating variable (MEAQ subdimensions) was added to the model. The significance of the mediation effect for the models was evaluated based on the 95% confidence interval obtained using the bootstrap method. An indirect effect whose confidence interval does not include "0" was considered statistically significant. The coefficients and significance (p) values of direct, indirect, and total effects in the models are shown in Table 3.

Table 2: Descriptive statistics and correlation analysis among weight self-stigma, emotional eating, and dimensions of experiential avoidance

Variable	Mean \pm SD	Skewness	Kurtosis	1	2	3	4	5	6	7	8
1. WSSQ	35.9 \pm 11.2	-0.39	-0.95	—							
2. EE	28.3 \pm 6.7	-0.70	-0.40	0.76**	—						
3. BA	25.8 \pm 7.3	-1.12	0.50	0.55**	0.42**	—					
4. DA	24.7 \pm 7.9	-0.99	0.05	0.62**	0.54**	0.70**	—				
5. PR	23.5 \pm 6.6	-0.80	-0.18	0.55**	0.59**	0.57**	0.55**	—			
6. DS	25.3 \pm 7.3	-1.20	0.87	0.43**	0.45**	0.57**	0.57**	0.45**	—		
7. RD	16.1 \pm 7.1	0.49	-0.44	0.21	0.30*	0.26*	0.24	0.43**	0.27	—	
8. DE	19.6 \pm 7.7	0.34	-0.95	-0.39**	-0.33**	-0.08	-0.22	-0.05	-0.01	-0.20	—

Pearson's Correlation was used. **p<0.01; *p<0.05; SD: Standard deviation; WSSQ: Weight Self-Stigma Questionnaire; BA: Behavioral avoidance; EE: Emotional eating; DS: Distraction/suppression; RD: Repression/denial; PR: Procrastination; DE: Distress endurance; DA: Distress aversion.

Table 3: Direct, indirect and total effects in models evaluating the dimensions of experiential avoidance: Bootstrap confidence intervals (confidence interval (CI) (Bias 95%)

	B	Lower	Upper
Direct effects			
WSSQ → BA	0.50*	0.42	0.59
BA → EE	0.04	-0.76	0.14
WSSQ → DS	0.43*	0.31	0.51
DS → EE	0.14*	0.04	0.22
WSSQ → RD	0.21*	0.09	0.32
RD → EE	0.14*	0.05	0.23
WSSQ → PR	0.64*	0.53	0.69
PR → EE	0.24*	0.16	0.35
WSSQ → DE	-0.39*	-0.52	-0.24
DE → EE	-0.04*	-0.13	0.07
WSSQ → DA	0.63*	0.55	0.70
DA → EE	0.11	-0.02	0.23
Indirect effects			
WSSQ → BA → EE	0.04	-0.01	0.09
WSSQ → DS → EE	0.05*	0.02	0.12
WSSQ → RD → EE	0.03*	0.01	0.06
WSSQ → PR → EE	0.15*	0.10	0.25
WSSQ → DE → EE	0.01	-0.04	0.04
WSSQ → DA → EE	0.06	-0.01	0.16
Total effects	0.76*	0.66	0.82

For direct effects, *p<0.05 bootstrap confidence intervals not including zero indicate statistical significance. For indirect effects, *p<0.05 bootstrap confidence intervals not including zero indicate significant mediation. WSSQ: Weight Self-Stigma Questionnaire; BA: Behavioral avoidance; EE: Emotional eating; DS: Distraction/suppression; RD: Repression/denial; PR: Procrastination; DE: Distress endurance; DA: Distress aversion.

The results of the analyses showed a statistically significant positive relationship between WSSQ and EE ($\beta=0.76$, 95% confidence interval [CI]=[0.66, 0.82]), (Appendix 1). Distraction/suppression mediated this relationship, while the direct effect remained significant ($\beta=0.70$), (Appendix 2). According to the model, distraction/suppression had a positive effect on EE, and this subdimension explained 19% of EE. When the fit indices of the model were examined, it was found to have good fit values [$\chi^2/df=1.89$; Tucker-Lewis Index (TLI)=0.89; Normed Fit Index (NFI)=0.92; Comparative Fit Index (CFI)=0.96; Root Mean Square Error of Approximation (RMSEA)=0.062].

Similarly, when the mediating role of procrastination was examined, a significant relationship was observed. The relationship between WSSQ and EE remained significant when procrastination was included in the model, but the direct effect decreased ($\beta=0.61$). According to the model, this subdimension explained 41% of emotional eating [$\chi^2/df=2.02$; TLI=0.91; NFI=0.90; CFI=0.96; RMSEA=0.061], (Appendix 3). In the model including repression/denial, the relationship between WSSQ and EE was also found to be statistically significant, with a decrease in the direct effect ($\beta=0.73$), and the rate of explained emotional eating was found to be 60%. When the fit indices of the model were examined, they were within the recommended value ranges [$\chi^2/df=1.72$; TLI=0.94; NFI=0.92; CFI=0.97; RMSEA=0.059], (Appendix 4). However, behavioral avoidance ($\beta=0.04$, 95% CI=[-0.01, 0.09]); distress endurance ($p>0.05$; $\beta=0.01$; 95% CI=[-0.04, -0.04]), and distress aversion ($p>0.05$; $\beta=0.06$; 95% CI=[-0.01, 0.16]) were not found to mediate the relationship between WSSQ and EE.

Thus, the hypothesis that higher levels of WSS would be associated with increased EE was confirmed. On the other hand, three of the hypotheses suggesting that the six subdimensions of EA would mediate this relationship were confirmed. It was concluded that the procrastination, distraction/suppression, and repression/denial subdimensions of EA had a significant mediating effect on this relationship. However, no significant mediation effect was observed for the behavioral avoidance, distress aversion, and distress endurance subdimensions.

DISCUSSION

The findings of this study indicate a positive, significant, and strong relationship between WSS and EE ($\beta=0.76$, 95% CI=[0.66, 0.82]). Therefore, it can be said that the findings are consistent with our first hypothesis. Similarly, previous studies have reported that internalized weight stigma is significantly associated with unhealthy eating behaviors, particularly uncontrolled and emotional eating (16). Research highlights that this relationship is multidimensional and that variables such as emotional stress, self-criticism, self-confidence, and BMI play important roles (16, 21–23). The effect of high levels of WSS on disordered eating behaviors has been partially explained by individuals' adoption of a harsh and self-aggressive attitude, along with a reduced capacity for self-reassurance (23, 24).

The fact that internalized stigma, which is one of the difficulties frequently experienced by overweight and obese individuals, shows a strong relationship with EE necessitates a more comprehensive evaluation of the psychological mechanisms underlying this relationship. Accordingly, the second hypothesis of the study tested whether the subdimensions of EA play a mediating role in this relationship. It was concluded that the procrastination, distraction/suppression, and repression/denial subdimensions of multidimensional experiential avoidance had a significant mediating effect on this relationship.

Although studies providing a comprehensive assessment of experiential avoidance are quite limited, the present findings are consistent with the relevant literature. Procrastination, which involves temporarily delaying impending distress, has been identified as a significant risk factor in the development of binge-eating behavior (25, 26). Prior research has reported that procrastination may represent a characteristic decision-making and coping style among individuals with binge-eating disorder (BED) (25). Similarly, individuals with overweight and obesity may cope with weight stigma by employing avoidance and psychological disengagement strategies, such as ignoring it without responding or viewing the situation as the other person's problem (27). Studies have generally shown that distraction strategies, defined as ignoring distress or redirecting attention toward an alternative stimulus or activity, are strongly associated with emotional eating (28). Within the framework of escape theory (10), distraction is considered an important coping mechanism for escaping negative emotions and distressing self-awareness. A significant mediating relationship was also observed for the repression/denial dimension—characterized by unawareness of or disengagement from distress. Deaux and Ethier's (29) (1998) negotiating social identity theory explains how individuals may adopt strategies to reject or reinforce their social identities depending on perceived threats. In the context of obesity, although it may be difficult to fully avoid identity-related perceptions due to visible body characteristics, individuals may deny external stereotypes or minimize their identity depending on the context (30, 31).

Therefore, the findings of the present study suggest that certain dimensions of EA may serve as critical mechanisms that strengthen the link between WSS and EE in individuals with overweight and obesity. This multidimensional assessment is considered informative for planning more targeted and personalized interventions for this population. According to ACT, EA includes behavioral withdrawal (e.g., avoiding situations

that elicit distress), distraction (e.g., self-harm), emotional numbing (e.g., substance use, dissociation), and direct attempts to alter internal experiences (e.g., self-talk, suppression) (32). This approach conceptualizes eating pathology through six core processes (acceptance, cognitive defusion, present-moment awareness, self-as-context, values, and committed action) and, by targeting EA, aims to enable individuals to experience unwanted internal events without attempting to change them (33). Within this framework, current findings indicate that ACT-based interventions decrease immature and neurotic defenses, increase mature defense styles and psychological flexibility, and significantly reduce BMI (34).

On the other hand, distress endurance and distress aversion emphasize the individual's capacity to act in accordance with their values despite distressing internal experiences. (35). While strategies such as distraction and suppression demonstrated significant mediating effects, the lack of significance in the mediating effects of distress endurance and distress aversion suggests that these dimensions may be related to broader functional domains. Another dimension with no significant mediating relationship is behavioral avoidance, which generally refers to the tendency to physically avoid negative stimuli (36). The absence of a significant mediating relationship in this dimension may indicate that participants resorted to cognitive and emotional avoidance strategies rather than physically withdrawing from distressing situations. Indeed, one of the central concepts emphasized in ACT is cognitive fusion, which refers to the tendency to perceive one's thoughts as absolute truths and to become overly identified with them (35). Studies conducted with individuals with obesity have shown a significant association between cognitive fusion and EE (37). In this context, the relatively stronger influence of cognitive processes on eating behaviors may help explain the non-significant mediating effect observed for this dimension.

Since there are no studies in the literature evaluating the relationship between WSS and EE within the framework of EA subdimensions, this study makes a valuable contribution to the field. The main reason for this gap is the uncertainty regarding the measurement of EA. It has been reported that the most widely used scale, the Acceptance and Action Questionnaire-II (AAQ-II), inadequately reflects the multidimensional structure of EA and largely measures neuroticism and negative affect (38). In contrast, MEAQ is considered a comprehensive tool that assesses EA across six subdimensions and has high theoretical compatibility with third-wave therapies (38, 39).

However, the study has some limitations. The sample size for the current study was determined to be 200 individuals using G*Power software to ensure sufficient statistical power. All participants were overweight or obese individuals who volunteered to participate through hospitals and healthy nutrition clinics. Due to time constraints and difficulties in recruiting obese individuals, particularly through voluntary participation, the study was unable to obtain a representative and demographically homogeneous sample. Findings on gender distribution in the relevant literature indicate that women are at greater risk of stigmatization and experience more intense discrimination than men. This situation is further reinforced by stricter social norms regarding the female body and idealized body representations in the media (40). Therefore, future research should explore gender-specific pathways and incorporate longitudinal designs to assess causal relationships. Additionally, in the present study, obesity was evaluated solely using BMI, which may be insufficient to capture important parameters such as regional fat distribution. Future studies are encouraged to include complementary measures, such as waist circumference, alongside examinations of gender differences.

CONCLUSION

To our knowledge, this is the first study to assess the mediating role and specific dimensions of EA in examining the relationship between WSS and EE in overweight and obese individuals. Our findings suggest that EE behavior increases as the level of WSS rises in overweight and obese individuals. In addition, it was concluded that the procrastination, distraction/suppression, and repression/denial subdimensions of EA had a significant mediating effect on this relationship. However, no significant mediation effect was observed for the behavioral avoidance, distress aversion, and distress endurance subdimensions. These findings suggest that the behavioral dimension of EA may play a comparatively limited role in the relationship between WSS and EE. In addition, the insignificant mediating effects of distress endurance and distress aversion suggest that these dimensions may be related to broader areas of functionality. From a clinical perspective, structuring interventions that target specific avoidance strategies within the frameworks of ACT, psychodynamic therapy, and cognitive-behavioral approaches may help make interventions both more individualized and more effective.

Ethical Approval: The Istanbul Gelisim University Ethics Committee granted approval for this study (date: 24.12.2021, number: 2021-40).

Informed Consent: Informed consent was obtained from all participants.

Conflict of Interest: The authors declare that they have no conflict of interest.

Financial Disclosure: The authors declare that they have no financial support.

Acknowledgments: This research is derived from Master's thesis by Dilan Gulacan under the supervision of Mehmet Oguzhan Kilincel and Guzin Mukaddes Sevincer.

Use of AI for Writing Assistance: Not declared.

Data Availability Statement: The data that support the findings of this study are available from the corresponding author upon reasonable request.

Contribution Categories		Author Initials
Category 1	Concept/Design	D.G., G.M.S., O.K.
	Data acquisition	D.G.
	Data analysis/Interpretation	D.G.
Category 2	Drafting manuscript	D.G.
	Critical revision of manuscript	G.M.S., O.K.
Category 3	Final approval and accountability	D.G., G.M.S., O.K.

Peer-review: Externally peer-reviewed.

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