



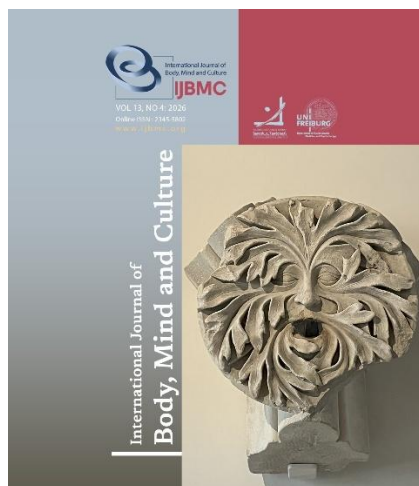
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# Loneliness and Psychological Distress Among Young Adults in Tehran: The Mediating Roles of Object Relations and Attachment Styles

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#### ABSTRACT

**Objective:** Previous literature has consistently identified a relationship between loneliness and psychological distress. However, it is crucial to explore the underlying psychological mechanisms that contribute to these problems. In this context, the present study aimed to investigate the mediating role of object relations and attachment styles in the relationship between loneliness and psychological distress among young adults residing in Tehran.

**Methods and Materials:** This cross-sectional study, employing structural equation modeling (SEM), was conducted on a sample of 510 participants (aged 18–40 years) selected through convenience sampling in 2024–2025. The instruments used included the Loneliness Scale, Bell Object Relations Inventory, Attachment Styles Questionnaire, and the Kessler Psychological Distress Scale. Data were analyzed using Pearson correlation, structural equation modeling, and SPSS and AMOS software (version 23).

**Findings:** The findings indicated that direct paths from loneliness ( $T = 12.93$ ,  $\beta = 0.59$ , 95% CI [0.49, 0.69]), object relations ( $T = 10.38$ ,  $\beta = 0.57$ , 95% CI [0.47, 0.67]), secure attachment ( $T = -6.33$ ,  $\beta = -0.33$ , 95% CI [-0.44, -0.22]), and insecure attachment ( $T = 8.75$ ,  $\beta = 0.45$ , 95% CI [0.34, 0.56]) to psychological distress were all statistically significant. The final structural model accounted for 49% of the variance in psychological distress ( $R^2 = 0.49$ ), indicating a substantial but not inflated level of explanatory power. Bootstrapped analyses confirmed significant indirect effects of loneliness through object relations ( $B = 0.42$ ,  $p < 0.001$ ), secure attachment ( $B = -0.45$ ,  $p < 0.001$ ), and insecure attachment ( $B = 0.52$ ,  $p < 0.001$ ).

**Conclusion:** Interventions focusing on object relations and attachment style may reduce psychological distress in this cultural context.

**Keywords:** Loneliness, Object Relations, Attachment, Psychological Distress, Interpersonal Relationships.

## Introduction

Human beings are inherently relational creatures. From birth, they depend on significant others to meet their physical and emotional needs. According to Erikson, young adults have a strong need to form close and affectionate relationships with others. Successful navigation of this stage leads to deep personal connections, whereas failure results in loneliness and isolation (Adamczyk et al., 2022).

Today, achieving intimacy versus isolation has become a major developmental challenge for young adults. While previous literature often defined young adulthood as ranging from ages 18 to 40 (Harwas-Napierala & Trempala, 2004), contemporary social changes such as rising rates of singlehood, extended educational trajectories, delayed marriage, and shifting lifestyles justify considering individuals over 30 as still navigating this developmental phase, especially in terms of emotional and social growth (Bühler & Nikitin, 2020).

A growing body of research has focused on the subjective quality of social relationships in relation to mental health. Loneliness, in particular, has emerged as a potent social determinant of psychological well-being (Wang et al., 2020). Studies indicate a notable prevalence of loneliness among adults and link it to the qualitative decline of attachment-supporting institutions, such as extended family, stable interpersonal relationships, and cohesive communities (Brown et al., 2023). Loneliness is defined as a distressing emotional experience stemming from the perceived gap between the interpersonal relationships individuals desire and those they actually have (Holt-Lunstad et al., 2015). In other words, loneliness arises when there is a discrepancy between current relationships and those one wishes to have (De Jong Gierveld et al., 2016). Given the complexities of modern life, which have deepened the conflict between intimacy and isolation, it is essential to investigate not only external relational factors but also the intrapsychic mechanisms underlying these experiences in adulthood.

Prior research has repeatedly established a relationship between loneliness and several psychological problems, including depression, anxiety, suicidal ideation, and personality disorders (Barger et al., 2014; Liebke et al., 2017; Meltzer et al., 2013). A critical point of focus has been the intersection of loneliness and psychological distress in non-clinical adult populations

(Mann et al., 2022). For example, one study found that emotional support, a construct conceptually close to loneliness, can act as a buffer against psychological distress (Ma, 2020). Research by Mann et al. (2022) identified loneliness as a significant mental health concern in the general population, highlighting its association with the onset of depression and other common mental health issues. In the Iranian context, researchers similarly highlight the role of loneliness in the relationship between social health and psychological distress (Sharif-Nia et al., 2025). However, they emphasized the need for future research to explore the psychological mechanisms underlying this association. The present study aims to fill this gap by examining such mechanisms.

Before delving into these mechanisms, it is important to distinguish between the state of being alone and the subjective experience of loneliness. Numerous studies have shown that being alone is neither a necessary nor sufficient condition for feeling lonely. Even children can differentiate between solitude and loneliness (Galanaki, 2004). Solitary behaviors and experiences are not inherently pathological or maladaptive. Whether individuals benefit from or suffer during solitude largely depends on their internal psychological resources.

Among these resources, the quality of object relations and one's attachment style play pivotal roles in determining whether solitude is experienced as enriching or distressing. Object relations theory emphasizes that early childhood experiences shape internalized representations of significant others (Kernberg, 2006). Winnicott, in particular, argued that when a child's needs are adequately met in the presence of a soothing caregiver, the child begins to develop the capacity to be alone. He viewed the capacity to be alone as one of the key markers of emotional maturity, essentially synonymous with it (Winnicott, 1958).

In general, the capacity to be alone depends on the presence of a "good object" (e.g., a benevolent internalized mother figure) within one's psychological reality. If that internalized object is experienced as hostile or absent, solitude becomes terrifying and leads to mental health issues such as depression, anxiety, and social withdrawal (Katz & Buchholz, 1999). Research shows that individuals with the capacity for solitude, stemming from healthy object relations, enjoy better mental health than those without it (Galanaki, 2013).

Based on this, the present study hypothesizes that object relations mediate the relationship between loneliness and psychological distress.

Another core intrapsychic variable with mediating potential in this relationship is attachment style. The concept of attachment, introduced by John Bowlby in 1969, refers to the enduring emotional bond formed with a specific individual, particularly in early life (Duschinsky, 2015). Attachment develops in childhood and remains relatively stable across the lifespan, influencing behaviors, mental health, and ultimately shaping one's personality. Insecure attachment, characterized by distrust, vulnerability, hypersensitivity, and relational problems, is often linked with poor psychological outcomes (Meredith et al., 2008). Even during some traumatic events like the COVID-19 pandemic, attachment style influenced mental health both directly and through mediators like social support (Shayegh et al., 2025; Yang et al., 2024). Furthermore, insecure attachment can predict increased loneliness and emotional distress, with loneliness mediating that relationship (Arul & Revathy, 2023).

According to Bowlby, secure attachment is formed through the primary caregiver's consistent responsiveness, making the child feel safe and supported. Individuals with secure attachment easily form connections with others, seek and provide support, and demonstrate better emotional regulation and adaptability. In contrast, those with insecure attachment often avoid close relationships, experience higher anxiety, lower self-esteem, use maladaptive emotion regulation strategies, and exhibit symptoms of depression and paranoid personality traits (Bowlby, 2010). They tend to display distress during separation from caregivers and struggle to feel soothed upon reunion (Arabi et al., 2020).

In Bowlby's view, individuals with responsive and attuned caregivers develop trust in others and a sense of self-worth, creating a positive internal working model of self and others (Bowlby, 2010). This secure model underpins many positive psychological traits, including the capacity for solitude, emotional independence, and the ability to form empathetic and intimate relationships. Conversely, insecure attachment leads to maladaptive internal working models, contributing to emotional dependence, relational difficulties, and persistent loneliness. Psychological consequences of

insecure attachment include increased anxiety and depression during stressful situations, while secure attachment provides emotional resilience. Empirical studies consistently link attachment styles to psychological distress, with those suffering from various mental health issues frequently reporting insecure attachment patterns (Kobak & Sceery, 1988; NAEBI et al., 2011). In sum, whether solitude becomes a source of growth or distress depends on one's attachment style. Secure attachment serves as an inner resource that maintains psychological well-being during periods of loneliness or stress. In contrast, the absence of such a secure foundation often leads to emotional turmoil. The present study aims to explore this hypothesis.

This research addresses a notable gap in the literature concerning the relationship between loneliness and mental health problems in the general population. Given the sociocultural shifts of recent decades and the growing impact of loneliness on adult psychological health, it is essential to examine the internal psychological mechanisms that explain how these issues are connected. Accordingly, this study seeks to develop a conceptual model to assess adult mental health, particularly among those navigating the developmental stage of intimacy versus isolation. The central research question is: Do object relations and attachment styles mediate the relationship between loneliness and psychological distress?

## Methods and Materials

### Study Design

This study was conducted within the framework of a cross-sectional, descriptive-correlational study. The present study aimed to model psychological distress based on feelings of loneliness in adults, with the mediating role of object relations and attachment styles. The statistical population comprised all adults residing in Tehran during 2024–2025. A total of 510 individuals were selected through convenience sampling.

An a priori statistical power analysis was conducted using the Monte Carlo method for structural equation modeling (SEM), following the recommendations of Wolf et al. (2013). Assuming a medium effect size (standardized path coefficient = 0.30),  $\alpha = 0.05$ , and desired power of 0.80, the minimum required sample size was estimated at 200. The achieved sample size of

510 participants, therefore, exceeded this threshold, providing adequate power to detect the hypothesized effects.

Inclusion criteria were: providing informed consent, being aged between 18 and 40 years, no history of psychiatric hospitalization, absence of acute psychological conditions, and basic literacy. Participants who submitted incomplete questionnaires were excluded from the analysis. Missing data from partially incomplete questionnaires were examined; if missing responses per case were <5% of the total items, they were handled using expectation-maximization (EM) imputation; otherwise, the case was removed (Enders, 2013).

#### Instruments

**Loneliness Questionnaire:** Developed by Dehshiri et al., (2008), this questionnaire consists of 38 items and assesses three dimensions: Loneliness from family relationships (items: 2, 4, 9, 12, 14, 16, 18, 20, 23–26, 32, 33, 35, 37), Loneliness from peer relationships (items: 1, 3, 5, 10, 11, 15, 19, 21, 29–31, 38), Emotional indicators of loneliness (items: 6–8, 13, 17, 22, 27, 28, 34, 36). Responses are rated on a 5-point Likert scale: Very High = 0, High = 1, Moderate = 2, Low = 3, Very Low = 4. Cronbach's alpha and test-retest reliability were reported as 0.91 and 0.83, respectively. Convergent validity correlations with the UCLA Loneliness Scale and the Beck Depression Inventory were 0.60 and 0.56, respectively.

**Bell Object Relations Inventory:** This 45-item instrument, developed by Bell (2003), is among the most widely used tools for assessing object relations, based on a multidimensional continuum derived from clinical interviews (Bell et al., 1986; Bellak et al., 1973). It includes four subscales: Egocentricity (items: 4, 5, 9–11, 19, 22, 24, 27, 35, 39, 40, 44), Alienation (items: 1, 15, 20, 21, 29, 30, 41, 42), Insecure attachment (items: 2, 7, 12, 13, 16, 23, 33, 34, 36), Social incompetence (items: 6, 14, 18, 28, 31, 32, 37, 38, 43). Items 3, 8, 17, 25, 26, and 45 are not included in any subscale. Items are answered as "true" or "false," with scoring based on a predetermined key: for most items, correct answers are scored as 1. For items 1, 15, 21, 30, 37, and 42, an incorrect answer is scored as 1. Items not included in subscales receive a score of zero. Bell reported four-week test-retest reliability ranging from 0.58 to 0.90 and internal consistency ranging from 0.78 to 0.90 (Bell, 2007). Correlations with psychiatric

rating scales have supported validity (Overall & Gorham, 1962), and the SCL-90-R. A Persian adaptation and psychometric validation by Mesgarian et al. confirmed the four-factor structure. Due to some variations in factor loadings, the scoring of each item (0–2) was adjusted based on factor analysis and expert judgment. Cronbach's alpha for subscales ranged from 0.66 to 0.77; split-half reliability ranged from 0.60 to 0.77; and overall ordinal theta was 0.86. Construct validity was further supported by significant correlations with defense mechanism levels (Mesgarian et al., 2020).

**Attachment Styles Questionnaire:** This 15-item questionnaire is based on Hazan & Shaver's (1994) attachment model, and has been normed for student, adolescent, and general Iranian populations (Besharat, 2005). It includes three subscales: *Secure attachment*, *Anxious-ambivalent (preoccupied)*, and *Avoidant attachment*. Items are rated on a 5-point Likert scale: Never = 0, Rarely = 1, Sometimes = 2, Often = 3, Almost Always = 4. Score ranges: Secure: 1–40, Avoidant: 1–30, Ambivalent: 1–35. Higher scores indicate stronger alignment with the corresponding style. Hazan and Shaver reported a test-retest reliability of 0.81; Collins and Read reported a Cronbach's alpha of 0.79. Construct validity was confirmed through factor analysis, which identified three main factors interpreted as capacities for emotional closeness (Collins & Read, 1994). In a study on 513 university students, Divandari reported convergent validity of 0.70 (via average variance extracted) and internal consistency of 0.94 (Cronbach's alpha) (Divandari et al., 2009).

**Kessler's psychological distress questionnaire:** The K10 comprises 10 items rated on a 5-point Likert scale: Never = 1, A little of the time = 2, Some of the time = 3, Most of the time = 4, All of the time = 5 (Kessler et al., 2003). Total scores range from 0 to 40: <13: Mild psychological distress, 14–27: Moderate distress, 28–40: Severe distress. Higher scores indicate greater psychological distress (van Bronswijk et al., 2021). In Iran, Cronbach's alpha was reported as 0.95 (Behbahani & Homaei, 2020). Criterion validity was established using cut-off scores correlated with the Composite International Diagnostic Interview (CIDI), with a cut-off point of 8 (Yaghubi, 2016). International studies have also confirmed high reliability, with reported alphas of 0.93 (Romero et al., 2021).

### Procedure

Following sample selection and volume determination, participants were provided with an overview of the research objectives and instructions for completing the questionnaires, emphasizing the importance of honesty in responses. The researcher was present during the administration to answer participants' questions as needed.

### Analysis

Data analysis involved descriptive statistics, Pearson correlation coefficients, and structural equation modeling. Analyses were conducted using SPSS and AMOS software, version 23. Model fit was evaluated using  $\chi^2/df$ , RMSEA, CFI, IFI, GFI, and NFI indices as recommended by Kline (2023).

### Ethical Considerations

Ethical standards, including confidentiality, informed consent, and respect for participants' rights, were fully observed.

### Findings and Results

A total of 510 participants took part in the study. Based on the collected data, 85 participants (16.7%) had less than a high school diploma, 121 (23.7%) held a high school diploma, 89 (17.5%) had an associate degree, 108 (21.2%) had a bachelor's degree, and 107 (21.0%) had a master's degree. Of the participants, 300 (57.5%) were male, and 210 (41.2%) were female. In terms of marital status, 293 (57.5%) were single, and 217 (42.5%) were married. The overall mean and standard deviation for psychological distress were 27.39 and 7.07, respectively.

**Table 1**

*Descriptive and Normality Statistics for Research Variables*

Variable	Mean	SD	Skewness	Kurtosis	KS Statistic	Sig.
Psychological Distress	16.97	8.24	1.14	-0.06	0.14	0.32
Loneliness - Family	20.23	9.30	1.07	-0.17	0.21	0.40
Loneliness - Friends	15.57	7.59	1.32	0.21	0.24	0.15
Emotional Signs of Loneliness	13.93	10.12	1.44	0.27	0.25	0.18
Total Loneliness Score	49.73	22.35	1.02	-0.45	0.26	0.22
Egocentricity	3.55	2.18	0.86	-0.72	0.22	0.20
Alienation	1.81	1.63	0.56	-1.03	0.18	0.14
Social Incompetence	2.10	1.76	0.55	-0.95	0.33	0.15
Total Object Relations	7.46	4.77	0.85	-0.64	0.35	0.22
Secure Attachment	9.52	4.41	0.04	-1.90	0.38	0.15
Insecure Attachment	13.61	8.61	1.12	-0.24	0.41	0.18

As shown in Table 1, the descriptive indices and normality statistics for the study variables are reported. The total number of participants was 510. The statistical assumptions underlying structural equation modeling (SEM) were then assessed, including sample size adequacy, normality, independence of residuals, multicollinearity, and the presence of significant correlations among the study variables.

Since the significance levels of the Kolmogorov-Smirnov normality tests in Table 1 were all greater than 0.05 ( $p > .05$ ), the distributions of the scores can be considered normal. In addition, skewness and kurtosis values for all variables fell within the acceptable range of -2 to +2, further supporting the assumption of normality.

The Durbin-Watson statistic was within the acceptable range (1.5–2.5), confirming the independence of residuals. Furthermore, none of the tolerance values were below the critical threshold of 0.10, and none of the variance inflation factor (VIF) values exceeded 10. These findings indicate that the assumption of no multicollinearity was satisfied. Therefore, the use of parametric tests, including Pearson's correlation coefficient and SEM, was deemed appropriate and reliable.

Finally, because a key assumption of SEM is the presence of significant correlations among the variables, the correlation matrix of the study variables is presented in Table 2.

**Table 2***Correlation Matrix of Study Variables (N = 510)*

Variable	1	2	3	4	5	6	7	8	9	10	11
<b>1. Psychological Distress</b>	1										
<b>2. Family Loneliness</b>	.51**	1									
<b>3. Friend Loneliness</b>	.52**	.53**	1								
<b>4. Emotional Loneliness</b>	.55**	.44**	.61**	1							
<b>5. Total Loneliness</b>	.64**	.69**	.68**	.64**	1						
<b>6. Egocentricity</b>	.48**	.46**	.67**	.64**	.69**	1					
<b>7. Alienation</b>	.46**	.60**	.62**	.67**	.65**	.67**	1				
<b>8. Social Incompetence</b>	.35**	.43**	.47**	.67**	.64**	.49**	.65**	1			
<b>9. Object Relations (Tot)</b>	.51**	.57**	.69**	.67**	.62**	.67**	.69**	.61**	1		
<b>10. Secure Attachment</b>	-.34**	-.43**	-.50**	-.59**	-.61**	-.55**	-.65**	-.57**	-.68**	1	
<b>11. Insecure Attachment</b>	.26**	.51**	.50**	.60**	.66**	.67**	.63**	.71**	.65**	-.59**	1

*Note.  $p < .01$ .*

As presented in Table 2, psychological distress was positively correlated with loneliness, object relations, and insecure attachment, and negatively correlated with

secure attachment ( $p < .01$ ). These significant correlations supported the prerequisites for structural equation modeling.

**Table 3***Reliability and Validity Indices of the Measurement Model*

Variable	$\alpha$	CR	AVE	1	2	3	4
<b>1. Loneliness</b>	.90	.89	.75	.87			
<b>2. Attachment</b>	.93	.93	.67	.82	.82		
<b>3. Object Relations</b>	.89	.88	.76	.79	.77	.87	
<b>4. Psychological Distress</b>	.90	.91	.80	.65	.68	.61	.89

*Note.  $\alpha$  = Cronbach's alpha; CR = Composite Reliability; AVE = Average Variance Extracted. Values on the diagonal represent the square root of AVE (shown in bold in APA tables). All coefficients meet or exceed the recommended thresholds ( $\alpha, CR \geq .70$ ;  $AVE \geq .50$ ).*

Prior to testing the structural model, the measurement model was evaluated for reliability and validity. As shown in Table 3, Cronbach's alpha and composite reliability values exceeded the recommended threshold of .70, confirming internal consistency. Convergent validity was established as all AVE values were above .50. Moreover, discriminant validity was

confirmed using the Fornell–Larcker criterion, as the square root of AVE for each construct was greater than its correlations with other variables. Collectively, these findings demonstrated that the measurement model possessed adequate psychometric properties, justifying the subsequent structural analyses.

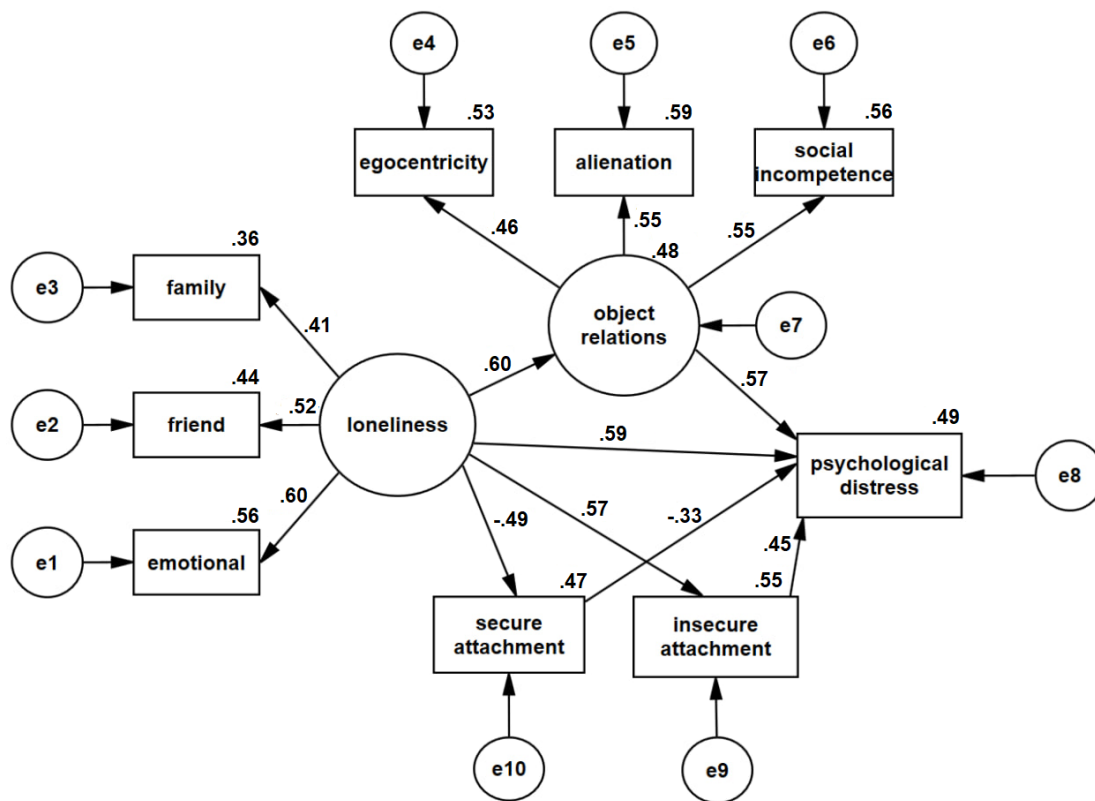


Figure 1

Final Structural Model

Figure 1 presents the final structural model of the study. The multiple correlation coefficient ( $R^2$ ) for psychological distress explained by loneliness, mediated through object relations and attachment styles, was 0.49.

This indicates that the model accounts for 49% of the variance in psychological distress. Model fit indices are presented in Table 4.

Table 4

Goodness-of-Fit Indices for the Structural Model

Fit Index	Obtained Value	Acceptable Threshold
Chi-square (CMIN)	61.95	-
Degrees of freedom (df)	23	-
Significance level (p)	.001	> .05
CMIN/df	2.69	< 3
RMSEA	.06	< .08
PCLOSE	.001	> .05 (ideal: not <)
CFI	.94	> .90
IFI	.93	> .90
GFI	.96	> .90
NFI	.91	> .90

As shown in Table 4, all major indices indicate that the model demonstrates an acceptable fit to the data. Specifically, the RMSEA (.06), CFI (.94), IFI (.93), GFI

(.96), and NFI (.91) fall within the recommended thresholds, supporting the adequacy of the hypothesized structural model.

**Table 5***Standardized and Unstandardized Direct Effects*

Independent Variable	Dependent Variable	$\beta$ (Std.)	B (Unstd.)	SE	t	p
Loneliness	Psychological Distress	.59	.52	.10	12.93	.001
Object Relations	Psychological Distress	.57	.51	.09	10.38	.001
Secure Attachment	Psychological Distress	-.33	-.31	.06	-6.33	.001
Insecure Attachment	Psychological Distress	.45	.42	.08	8.75	.001

As presented in Table 5, all direct paths from loneliness, object relations, secure attachment, and

insecure attachment to psychological distress were statistically significant.

**Table 6***Bootstrapped Indirect Effects*

Independent Variable	Mediator	Dependent Variable	B (Unstd.)	95% CI (Lower)	95% CI (Upper)	p
Loneliness	Object Relations	Psychological Distress	.42	.60	.77	.001
Loneliness	Secure Attachment	Psychological Distress	-.45	-.48	-.72	.001
Loneliness	Insecure Attachment	Psychological Distress	.52	.51	.83	.001

Using 2,000 bootstrap samples, all indirect effects were statistically significant. Specifically, loneliness predicted psychological distress indirectly through object relations ( $B = .42$ ,  $p < .001$ ), through secure attachment ( $B = -.45$ ,  $p < .001$ ), and through insecure attachment ( $B = .52$ ,  $p < .001$ ).

Overall, the findings support the mediating role of both object relations and attachment styles in the relationship between loneliness and psychological distress. The structural model explained nearly half of the variance in psychological distress, highlighting the substantial contribution of internal relational and attachment mechanisms to psychological outcomes.

## Discussion and Conclusion

The present study aimed to examine the mediating role of object relations and attachment styles in the relationship between loneliness and psychological distress. The findings revealed that object relations serve as a significant mediator in the link between loneliness and psychological distress. These results are consistent with research findings (Detrixhe, 2011; Galanaki, 2004; Hamilton et al., 1994; Katz & Buchholz, 1999).

This finding can be interpreted in light of Winnicott's theory of the capacity to be alone (Winnicott, 1958). In other words, whether an individual benefits from solitude or is vulnerable to the negative emotional effects of loneliness depends on their internal resources, most notably, their object relations. According to object

relations theory, early childhood experiences shape internalized representations of significant others (Kernberg, 2006). From this perspective, loneliness may be viewed as a psychological emptiness or a failure to internalize a reliable object. Inadequate or harmful internalized objects can pave the way for psychological problems such as depression and anxiety (Katz & Buchholz, 1999). Object relations theory, rooted in psychodynamic principles, examines how individuals internalize and externalize interpersonal relationships (Hamilton et al., 1994). From birth, the infant exists within the fabric of these relational dynamics, driven not solely by the reduction of tension but by a fundamental motivation to relate to others. Hence, interpersonal relationships play a central role in psychological life (Hamilton et al., 1994). In addition to psychodynamic perspectives, cognitive theories suggest that maladaptive schemas that formed through early negative experiences can exacerbate the perception of social threat, intensifying loneliness and distress (Vieira et al., 2023).

Some individuals, though physically alone, may maintain a rich inner world through well-integrated internalized objects. Others may experience emotional emptiness, social incompetence, and egocentric tendencies as a result of poorly developed internal object relations. This psychological void may, in turn, predispose individuals to emotional disorders such as depression and anxiety. Notably, anxiety in this context can emerge not from a fear of death (as posited by

Melanie Klein) but from the fear of losing an internalized object, the psychological essence of loneliness.

Although prior studies (Barger et al., 2014; Liebke et al., 2017; Meltzer et al., 2013) have shown consistent correlations between loneliness and psychological distress, often attributing such outcomes to external social factors such as isolation, small social networks, or low-income family ties, the present study's findings underscore the need to also focus on internal relational dynamics. The mediating role of object relations suggests that intrapsychic factors may be even more critical in explaining psychological distress. As Winnicott emphasized, the capacity to be alone anchored in internalized, nurturing relationships is a key sign of emotional maturity (Winnicott, 1958) and may serve as a protective factor against psychological distress.

Another major finding of the study was that attachment styles also significantly mediated the relationship between loneliness and psychological distress. This is consistent with the other findings (Arabi et al., 2020; Kobak & Sceery, 1988; NAEBI et al., 2011). This result can be understood through Bowlby's internal working model of attachment (Bowlby, 2010). According to this model, individuals who experience loneliness often have negative internal models of themselves or others. These internal schemas hinder the formation or maintenance of meaningful close relationships and consequently contribute to loneliness and psychological problems. From a cognitive-behavioral view, insecure attachment may limit the use of adaptive coping strategies during social stress, while socially supportive environments can partially offset these vulnerabilities (Mikulincer et al., 2021).

A secure and available internal working model fosters emotional regulation, intimacy, autonomy, and the capacity to tolerate solitude, all of which are essential to healthy development (Kobak & Sceery, 1988). In contrast, individuals who experience loneliness without access to such a model are more prone to psychological problems such as anxiety and depression. Insecure attachment manifests as fear of abandonment, emotional withdrawal, overreliance on self, defensiveness, and a lack of emotional engagement in relationships (Bowlby, 2010). These maladaptive traits can intensify the psychological toll of loneliness.

Attachment, as a psychological construct, is a key determinant of emotional bonding and significantly

influences social development and psychological functioning. Secure attachment acts as a vital internal resource that protects psychological well-being during periods of loneliness or stress. Conversely, insecure attachment can impair resilience in the face of solitude and increase vulnerability to emotional distress. In short, secure attachment provides individuals with the internal capacity to tolerate loneliness, regulate emotions, and form meaningful relationships, while the absence of this capacity may intensify adverse psychological outcomes.

In summary, the findings of this study suggest that object relations and attachment styles help explain how loneliness leads to psychological distress. The proposed model highlights the essential role of core internal resources, namely, object relations and attachment patterns, in the loneliness-distress dynamic. This suggests the need to move beyond a sole focus on external social relationships and instead pay closer attention to intrapsychic and developmental processes to understand and address loneliness and its psychological consequences.

One notable limitation of the study is its reliance on self-report instruments, which may not fully capture complex variables such as object relations and attachment styles. Moreover, the study's cross-sectional and correlational design precludes causal interpretations. The use of convenience sampling with a non-representative sample of young adults limits generalizability to the wider Iranian population. All variables were measured using self-report Likert-type instruments, increasing the potential for common method variance (Podsakoff et al., 2003). Future studies are encouraged to adopt experimental or longitudinal designs that offer stronger causal inferences. Additionally, incorporating more diverse samples and using clinical interviews or observational tools could enhance assessment accuracy and increase generalizability.

The findings of this study illustrated that loneliness has a deep impact on psychological distress via the mediational effects of object relations and attachment style. These mediators suggest that the quality of internal relationships and one's attachment pattern can dictate the extent to which loneliness will impact mental health. The results highlight the applicability of interventions intended to improve object relations and facilitate secure attachment styles as useful avenues of reducing

psychological distress. For mental health services, this means implementing culturally tailored prevention programs, attachment-focused therapies, and community-based initiatives to strengthen social bonds and intrapsychic resilience in young adults. Overall, the more complex description of the psychological mechanisms behind loneliness can inform more targeted and efficient therapeutic interventions for enhancing adult mental health.

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### Declaration of Interest

The authors of this article declared no conflict of interest.

### Ethical Considerations

The study protocol adhered to the principles outlined in the Declaration of Helsinki, which provides guidelines for ethical research involving human participants. Ethical considerations in this study were that participation was entirely optional.

### 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.

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### Authors' Contributions

All authors equally contribute to this study.

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