

Exploring Attachment Styles, Psychological Distress, and Loneliness among Indian Young Adults: A Moderation-Based Survey Approach

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Abstract: The present study investigated the moderating effects of attachment styles on the relationship between psychological distress and loneliness in young adults from Delhi, India. Participants (N=151) aged 18-24 years, completed the UCLA 3-Item Loneliness Scale, the Kessler Psychological Distress Scale (K10), and the Relationships Questionnaire (RQ). Moderation analysis was carried out using SPSS PROCESS macro. The overall regression model was found to be significant, and a significant negative association was observed between psychological distress and loneliness. Significant differences in loneliness were observed between preoccupied and secure attachment styles, and fearful and secure attachment styles, with securely attached individuals reporting the highest levels of loneliness. Conversely, differences in loneliness between dismissing and secure attachment styles were nonsignificant. Moreover, the impact of psychological distress on loneliness did not significantly vary among those with different attachment styles. Thus, attachment styles were not found to significantly moderate the relationship between psychological distress and loneliness. The present study highlights the experiences of loneliness among securely attached individuals as well as a negative correlation between psychological distress and loneliness. It prompts important questions for future investigation, including the role of age, personality traits, coping mechanisms, and resilience in relation to attachment styles, psychological distress, and loneliness.

Keywords: Attachment Styles; Loneliness; Psychological Distress; Moderation

Loneliness can be defined as a distressing feeling accompanied by the perception that one's social needs are not being fulfilled in terms of the quantity and quality of social relationships (Hawkey et al., 2008; Peplau & Perlman, 1982). It is influenced by major life events such as the loss of loved ones, relationship and friendship break-ups, psychological disorders, and social restrictions like isolation and quarantine, particularly during a pandemic, which can lead to feelings of loneliness in individuals. Even before the COVID-19 pandemic, loneliness was already a significant public health concern (Cacioppo & Cacioppo, 2018; Holt-Lunstad, 2017; National Academies of Sciences, Engineering, & Medicine, 2020).

Psychological distress refers to a state of emotional suffering, discomfort, and overwhelm often accompanied by symptoms of depression and anxiety

(Mirowsky & Ross, 2002). It can manifest in physiological symptoms like lethargy, headaches, and insomnia, and can disrupt daily activities and social functioning (Kirmayer, 1989; Kleinman & Kleinman, 1991; Wheaton, 2007).

Attachment theory elucidates the human propensity to develop strong affectional bonds with others (Bowlby, 1977) and serves as an indicator of the degree of security experienced in interpersonal relationships (Baron & Branscombe, 2011). Hazan and Shaver (1987) describe secure, avoidant, and ambivalent attachment styles, while Bartholomew and Horowitz (1991) proposed four attachment styles: secure, fearful, preoccupied, and dismissing. These attachment styles shape the quality of relationships, thoughts about others, behaviours, support-seeking tendencies, and the extent of self-disclosure (Baron & Branscombe, 2011).

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Recently, considerable evidence from longitudinal studies (Dinero et al., 2008; Jones et al., 2017) has accumulated to show that in addition to early caregiving experiences, ongoing and relatively recent interpersonal and attachment experiences play a pivotal role in influencing adult attachment patterns, with attachment stability increasing significantly from adolescence (a period characterized by large and rapidly changing social networks, evolving social roles, and biological changes) to adulthood. Together, these studies reiterate the importance of studying attachment styles in adolescence and young adulthood.

Studying loneliness, psychological distress, and attachment theory in young adults in India is important for several reasons. Firstly, understanding the prevalence and impact of loneliness and psychological distress in this population can help identify the specific needs and challenges faced by young adults in India. Research has shown that young adults are particularly vulnerable to loneliness, and the COVID-19 pandemic has exacerbated feelings of isolation and distress (Bu et al., 2020; Hysing et al., 2020). Examining these issues within the Indian context provides valuable insights into the unique cultural, social, and economic factors that may contribute to loneliness and psychological distress in this specific population. Secondly, investigating attachment theory in young adults can shed light on the influence of early attachment experiences on their current relationships and well-being. Attachment styles play a crucial role in shaping the way individuals perceive and navigate their social connections (Bartholomew & Horowitz, 1991). Understanding attachment patterns in Indian young adults can provide valuable information about the interplay between cultural norms, family dynamics, and attachment-related experiences in shaping their interpersonal relationships and mental health outcomes.

The Interplay between Attachment Styles, Loneliness, and Psychological Distress

Findings indicating a significant positive relationship between loneliness and psychological distress have appeared in several studies in recent years (Cacioppo et al., 2006; Konno et al., 2021; Mushtaq & Sirajudeen, 2021) across multiple age groups and geographical locations. Interestingly, Yung et al. (2021) found this

positive relationship to be significant at the moment-to-moment and day-to-day levels. However, studies exploring the relationship between loneliness and psychological distress among young adults in the Indian context are limited. Moreover, Heu et al. (2021) direct our attention towards a paucity of research regarding the experiences of loneliness within socially embedded cultures such as the one prevalent in India. Thus, in light of the existing findings we hypothesize a significant positive relationship between loneliness and psychological distress among Indian young adults (Hypothesis one).

Furthermore, empirical evidence consistently demonstrates that attachment styles, specifically secure, fearful, preoccupied, and dismissive, exert a noteworthy influence on individuals' subjective experiences of loneliness and psychological distress. Extensive research supports the notion that individuals with a secure attachment style tend to exhibit lower levels of loneliness and psychological distress, indicating a greater sense of emotional well-being (Erozkan, 2011; Goossens et al., 1998; Kiralp & Serin, 2017). Conversely, individuals with a fearful attachment style often confront heightened levels of loneliness and psychological distress, owing to internal conflicts and difficulties in interpersonal relationships. Similarly, those with a preoccupied attachment style frequently report elevated levels of loneliness and psychological distress, driven by apprehensions about rejection and an excessive preoccupation with maintaining close connections (Ciocca et al., 2020; Erozkan, 2011). Additionally, individuals with a dismissive attachment style, characterized by an inclination to avoid emotional intimacy, may experience heightened levels of loneliness and psychological distress (Erozkan, 2011; Spence, Jacobs, & Bifulco, 2018). These collective research findings underscore the substantial impact of attachment styles on individuals' subjective experiences of loneliness and psychological distress. Although limited research has specifically examined the impact of attachment styles on loneliness and psychological distress in the Indian context, several studies have explored the association between attachment styles and these outcomes separately. For example, Suri et al. (2019) found that individuals with a secure attachment style reported lower levels of loneliness and psychological distress. Dhal et al. (2007) observed that Indian adolescents with

a secure attachment style experienced lower levels of loneliness compared to those with insecure attachment styles. These findings indicate that attachment styles shape the experiences of loneliness and psychological distress among individuals in the Indian context.

Attachment Styles as Moderators

Despite the substantial body of research linking attachment styles, loneliness, and psychological distress, certain gaps persist. Numerous studies have reported the moderating effect of attachment styles on

the relationship between brand attachment and brand personality (Tuan et al., 2012), maternal lifetime betrayal trauma and parent and child well-being (Choi & Kangas, 2020), reasons for studying and academic outcomes and GPA (Gore & Rogers, 2010), and marital adjustment and depressive symptoms (Scott & Cordova, 2002). However, the role of attachment styles as moderators in the relationship between loneliness and psychological distress remains an underexplored area. Hence, in light of the existing literature, we hypothesize the following:

H1: There is a significant positive relationship between loneliness and psychological distress among Indian young adults.

H2: Attachment styles significantly moderate the relationship between loneliness and psychological distress.

Conceptual and statistical diagrams representing this are illustrated in Figures 1 and 2 respectively.

Figure 1

A Conceptual Diagram of the Moderation Model with Attachment Styles as the Moderator

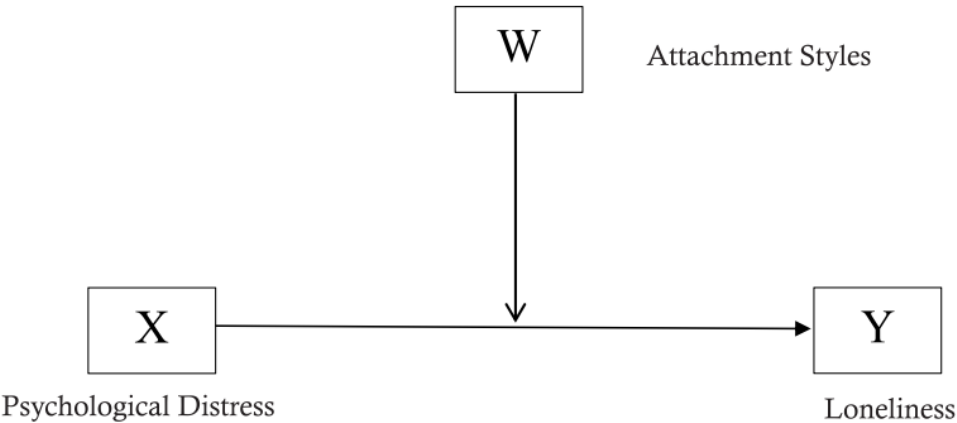
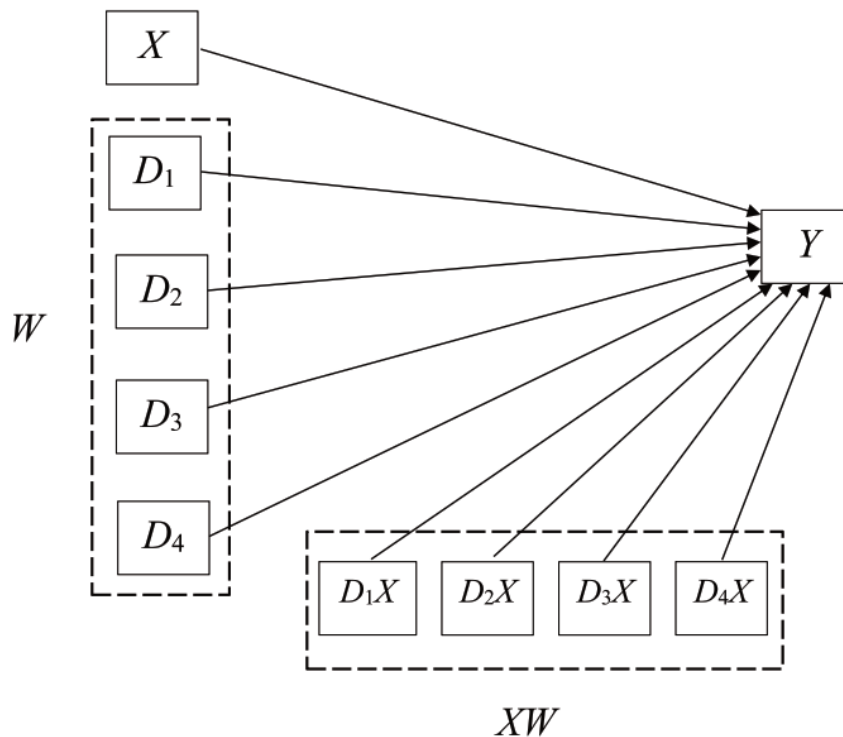


Figure 2

A Statistical Diagram of the Moderation Model with Attachment Styles as the Moderator



Note. D1, D2, D3, and D4 represent different levels of the multicategorical variable, namely, secure, preoccupied, dismissing, and fearful attachment styles.

Method

Participants

The present study utilized a convenience sampling method to gather data from 151 Indian young adults aged 18-24 years residing in Delhi. Of these, 86 (57%) were women. To ensure methodological rigour and establish robust inclusion criteria, factors such as age and place of residence were carefully considered and controlled for. The exclusion criteria included individuals below 18 years of age and those who resided outside Delhi.

Design

The present study utilizes a descriptive survey research design to study the relationship between loneliness and psychological distress and the impact of attachment styles on this relationship. Data from participants were collected online using the survey method with the help

of Google Forms. Using an online mode of data collection enabled the gathering of data for each variable at multiple time points, helping to mitigate (to a certain extent) the inherent common method bias associated with relying solely on a single data collection approach (survey). A moderation analysis was employed to determine the strength and direction of the relationship between psychological distress and loneliness as well as the moderating effect of attachment styles on this relationship.

Measures

The UCLA 3-Item Loneliness Scale. The UCLA 3-Item Loneliness Scale (Hughes et al., 2004; Russell, Peplau, & Ferguson, 1978; Russell, 1996) was used to assess loneliness, measuring relational connectedness, social connectedness, and self-perceived isolation. The scale had a range of 3-9, with higher scores indicating greater loneliness. This version of the scale has been found to demonstrate high reliability, with coefficient alpha

values ranging from .89 to .94 across various samples such as college students, nurses, teachers, and elderly (Russell, 1996). These results indicate strong internal consistency and suggest that the scale consistently measures loneliness across different populations. Scores on this scale have been found to be strongly related to those on other established measures of loneliness such as the NYU Loneliness Scale and the Differential Loneliness Scale indicating the scale's strong convergent validity. Construct validity of the scale is underscored by significant positive correlations of scores to personality traits of Neuroticism and Introversion-Extraversion, as well as depression. The scale's discriminant validity has been supported by negative correlations between loneliness and measures of self-esteem and social desirability. The discriminant validity of the scale is further supported by confirmatory factor analysis which revealed that the measure of loneliness defined distinct factors and related differently to other mood and personality measures (Russell, Kao, & Cutrona, 1987).

Kessler Psychological Distress Scale. Psychological distress was measured using the Kessler Psychological Distress Scale (K10) (Kessler et al., 2003), consisting of 10 items assessing emotional states. Scores ranged from 10 to 50, with higher scores indicating higher levels of psychological distress. The scale has demonstrated consistent psychometric properties across a number of major sociodemographic subsamples, including good test-retest reliability and good internal consistency ($\alpha=.92$) (Kessler et al., 2002). Additionally, factor analyses conducted in general population samples indicated that the questions within the K10 scale possess high loadings on a first principal factor of nonspecific distress, consistent with other widely used scales in this domain. Moreover, the scale has been found to exhibit good precision within the 90th–99th percentile range of the population distribution, with standard errors of standardized scores ranging from 0.20 to 0.25. The K10 scale also exhibited good discriminant validity with areas under the Receiver Operating Characteristic (ROC) curve of 0.87–0.88 for disorders having Global Assessment of Functioning (GAF) scores of 0–70 and 0.95–0.96 for disorders having GAF scores of 0–50. This indicates the scale's ability to strongly discriminate between community cases and non-cases of DSM-IV/SCID disorders.

Relationships Questionnaire. Attachment styles were assessed using the Relationships Questionnaire (RQ) (Bartholomew & Horowitz, 1991), an adaptation of Hazan and Shaver's (1987) three-category attachment measure. The questionnaire consists of four statements resembling four attachment styles, namely, secure, fearful, dismissing, and preoccupied, of which respondents must select one that best describes them. In addition, respondents are also asked to rate how well or poorly each of those statements corresponds to their general relationship style on a 7-point Likert scale ranging from 1 (Disagree Strongly) through 4 (Neutral/Mixed) to 7 (Agree Strongly). The attachment prototype with the highest rating was used to categorize participants into specific attachment styles. In case two or more attachment prototypes were equally rated, then the statement resembling one of the four attachment styles selected by the respondent was considered to categorize them. The scale has been shown to have a test-retest reliability of 0.74–0.88 (Ligiéro & Gelso, 2002) and a good construct, convergent and discriminant validity across cultures (Schmitt et al., 2004).

Procedure

The three scales were administered to the participants who met the inclusion criteria. Informed consent was taken from all the respondents prior to their participation. All queries that surfaced during the administration of the scales were addressed. The results were analyzed using moderation analysis.

Results

Prior to conducting the data analysis, a normality test was performed to assess the distribution of the data, and the results indicated a violation of the assumption of normality. Consequently, moderation analysis was utilized to examine the data using SPSS software (Version 29.1.00), given its applicability to non-normal data (Hayes & Montoya, 2017). The data was screened for outliers using the Mahalanobis, Cook's, and Leverage tests and was also found to be in adherence with the assumption checks for linearity, homogeneity, and homoscedasticity. Hence, the hypotheses were evaluated for statistical significance by employing a moderation analysis using SPSS PROCESS Macro. The demographic characteristics of the participants are

given in Table 1. The mean age of the participants was 19.477 (SD = 1.934). The participants reported a mean score of 6.15 (SD = 1.632) on the measure of loneliness and 25.15 (SD = 8.115) on the measure of psychological distress. Individuals with a secure attachment style reported the highest scores on loneliness (M = 7.17, SD = 1.689) followed by those with a dismissing attachment style (M = 6.71, SD = 1.537). While individuals with a preoccupied attachment style reported the lowest scores on

loneliness (M = 5.27, SD = 1.194), those with a fearful attachment style reported similar scores (M = 5.47, SD = 1.289). On the measure of psychological distress, individuals with a fearful attachment style reported the highest scores (M = 29.05, SD = 7.469) followed by those with a preoccupied attachment style (M = 27.00, SD = 7.502). Securely attached individuals reported the lowest scores on psychological distress (M = 21.29, SD = 7.887) while those with a dismissing attachment style also obtained a low score (M = 23.15, SD = 7.548).

Table 1

Demographic characteristics of participants

Sample Characteristics	N	%	M	SD
Gender				
Male	65	43		
Female	86			
Age			19.477	1.394
Attachment Style				
Secure Attachment	35	23.18		
Preoccupied Attachment	37	24.50		
Dismissing Attachment	41	27.15		
Fearful Attachment	38	25.17		
Loneliness			6.15	1.632
Psychological Distress			25.15	8.115
Loneliness				
Secure Attachment			7.17	1.689
Preoccupied Attachment			5.27	1.194
Dismissing Attachment			6.71	1.537
Fearful Attachment			5.47	1.289
Psychological Distress				
Secure Attachment			21.29	7.887
Preoccupied Attachment			27.00	7.502
Dismissing Attachment			23.15	7.548
Fearful Attachment			29.05	7.469

Note: N= 151

The overall regression model was found to be significant ($F(7,143) = 13.86, p < .05$) and the variables (attachment styles and psychological distress) explained 40% of the variance in loneliness ($R^2 = .40$). As depicted in Table 2, a significant and negative association ($b = -.1114, t(151) = -3.97, p < .05$) was observed between psychological distress (PD) and loneliness. Thus, the first hypothesis proposing a significant positive relationship between loneliness and psychological distress is not supported and psychological distress was found to be a negative predictor. Noteworthy differences in loneliness among different attachment styles surfaced. Secure attachment style was used as the reference category in line with the indicator coding employed by PROCESS macro. Differences in loneliness were found to be significant between preoccupied and secure attachment styles ($b = -1.3300, t(151) = -4.06, p < .05$), with individuals characterized by preoccupied

attachment style exhibiting a lower level of loneliness. Similarly, significant differences in loneliness were observed between fearful and secure attachment styles ($b = -.9894, t(151) = -2.91, p < .05$) with lower levels of loneliness observed in individuals with fearful attachment style. Conversely, differences in loneliness between dismissing and secure attachment were found to be nonsignificant ($b = -.2105, t(151) = -0.67, p > .05$). Furthermore, the analysis of interaction 1 (Int 1) revealed that the impact of psychological distress on loneliness in individuals with a preoccupied attachment style does not significantly differ from those with a secure attachment style ($b = .0354, t(151) = .883, p > .05$). Similar results were obtained with regard to interactions 2 and 3 (Int 2 and Int 3), with no significant differences observed between dismissing and secure attachment styles ($b = .0231, t(151) = .594, p > .05$), as well as, between fearful and secure attachment styles ($b = .0402, t(151) = 1.008, p > .05$). Consequently, none of the interactions exhibited statistical significance

Table 2

Moderating effects of attachment styles on the relationship between loneliness and psychological distress

Variable	b	SE	t	p	95% CI	
					LLCI	ULCI
Constant	6.7413	0.2435	27.6872	0.000	6.26	7.2226
PD (X)	-0.1114	0.0281	-3.9726	0.0001*	0.1669	-0.056
W1	-1.33	0.3273	-4.0643	0.0001*	-1.9769	-0.6832
W2	-0.2105	0.3206	-0.6565	0.5126	-0.8443	0.4233
W3	-0.9894	0.3397	-2.9126	0.0042*	-1.6609	-0.3179
Int 1	0.0354	0.0401	0.8834	0.3785	-0.0438	0.1147
Int 2	0.0231	0.039	0.5941	0.5534	-0.0539	0.1001
Int 3	0.0402	0.0399	1.0081	0.3151	-0.0387	0.1191

Note: * $p < 0.05$ indicating a significant result; PD= Psychological Distress; W1= preoccupied vs secure; W2= dismissing vs secure; W3= fearful vs secure; Int 1 (interaction 1) = W1 X PD; Int 2 (interaction 2)= W2 X PD; Int 3 (interaction 3)= W3 X PD; LLCI= lower limit; UL= upper limit

The test of unconditional interaction showed that the inclusion of the interaction term ($X*W$) did not produce a significant change in R^2 ($F(3,143) = .4060, p > .05, \Delta R^2 = .0051$). This is shown in Table 3. Thus, our second hypothesis, positing the role of attachment styles as a significant moderator in the relationship between loneliness and psychological distress is not supported.

Table 3

Test of highest-order interaction

	ΔR^2	F	df 1	df 2	p
$X*W$	0.0051	0.4060	3.0000	143.0000	.7489

Note: X = Psychological Distress; W = Attachment Styles

Discussion

The present study attempted to deepen our understanding of the nuanced relationships between attachment styles, loneliness, and psychological distress in Indian young adults, falling in the 18-24 years age group. Furthermore, the role of attachment styles as moderators of the relationship between psychological distress and loneliness was explored.

Firstly, our regression analysis showed that attachment styles and psychological distress collectively and significantly accounted for 40 per cent of the variance in loneliness. This pattern of results is consistent with previous research that reports the influence of both psychological distress (Cacioppo et al., 2006; Konno et al., 2021; Mushtaq & Sirajudeen, 2021) and attachment styles (Ciocca et al., 2020; Deniz et al., 2005; DiTommaso et al., 2003; Erozkhan, 2011; Goossens et al., 1998; Kıralp & Serin, 2017; Spence, Jacobs, & Bifulco, 2018) on loneliness.

Contrary to our initial hypothesized association, the study revealed a significant and negative relationship between psychological distress and loneliness. However, past researchers report a positive relationship between these variables (Cacioppo et al., 2006; Konno et al., 2021; Latikka et al., 2022; Mushtaq & Sirajudeen, 2021). While previous research studies report contrasting findings, a cogent line of reasoning to substantiate the present findings could be that individuals experiencing high levels of distress may actively seek help to alleviate their distress by nurturing

and sustaining meaningful relationships with important others, potentially lowering their loneliness (Chen, 2012; Walters et al., 2008). This may be furthered by an increased sense of social connectedness that has accompanied the open conversation and awareness around mental health issues which has been witnessed in the last few years (Kishore et al., 2011; Rangaswamy & Patel, 2010). Collectively, these factors may reduce feelings of loneliness while facing distress. Interestingly, Jackson and Cochran (1991) found that only specific types of psychological distress, namely depression and low self-esteem were found to be significantly and positively associated with self-reported loneliness, after controlling for intercorrelations between the subscales in the measure employed. Consequently, they argue that the substantial chunk of literature reporting a significant positive association between psychological distress and loneliness could be attributed to the measurement problem of high intercorrelations between psychological symptomatology as assessed by widely used inventories (Mischel, 1968).

Furthermore, we obtained evidence for significant differences in the amount of loneliness experienced by individuals with different attachment styles. The findings of the present study parallel those of other studies that report a significant difference in loneliness between individuals with preoccupied and secure attachment styles, as well as fearful and secure attachment styles (Ciocca et al., 2020; Deniz et al., 2005; DiTommaso et al., 2003; Erozkhan, 2011; Goossens et al., 1998; Kıralp & Serin, 2017; Spence,

Jacobs, & Bifulco, 2018). Interestingly, no significant differences were observed in individuals with dismissing and secure attachment styles, and comparisons of mean loneliness scores showed the highest scores among individuals exhibiting these attachment styles. While higher levels of loneliness in persons with a dismissing attachment style have been reported in the past (Erozkan, 2011), these results present one of the first pieces of evidence of individuals with a secure attachment style reporting higher levels of loneliness. The present study's finding of individuals with secure attachment styles reporting a higher level of loneliness contrasts with previous research (Bernardon, Babb, Hakim-Larson, & Gragg, 2011; Erozkan, 2011). Although secure attachment is generally associated with lower levels of loneliness, these studies suggest that secure attachment does not entirely eliminate feelings of loneliness. Kiralp and Serin (2017) found a low negative correlation between loneliness and secure attachment, indicating that securely attached individuals may still experience some degree of loneliness. Additionally, Ross and Inagaki (2022) discovered that securely attached individuals engaged in intense recollection of past positive social interactions during periods of social isolation, which heightened their feelings of loneliness. These findings imply that factors such as individual differences in recollection and the context of social isolation can influence the relationship between secure attachment and loneliness. Further research is warranted to comprehensively investigate the underlying mechanisms and contextual influences in the association between attachment styles and loneliness.

Another major finding in this study is that attachment styles were not found to moderate the relationship between psychological distress and loneliness significantly. Although the influence of attachment styles on loneliness and psychological distress has been well documented (Bartholomew & Horowitz, 1991; Ciocca et al., 2020; Erozkan, 2011; Surcinelli et al., 2010), the present study showed that the impact of psychological distress on loneliness did not vary significantly across different attachment styles. We believe that the moderating influence of attachment styles on the relationship between psychological distress and loneliness may exhibit a greater degree of complexity than the initially hypothesized simple moderation. In fact, attachment

styles have been found to interact with perceived social support, coping strategies, and resilience (Karreman & Vingerhoets, 2012; Khodarahimi et al., 2016; Ognibene & Collins, 1998). Hence, additional investigation involving the aforementioned variables is merited to uncover the nuanced relationship between attachment styles, loneliness, and psychological distress.

Although the present results clearly support certain aspects of attachment style theories and the interactive effects of attachment styles on the experience of loneliness and psychological distress, it is appropriate to recognize some potential limitations of the study, one being the generalizability of results and the need for a larger sample size. Additionally, common method bias (CMB), which occurs as a result of using a single method for measuring all variables in a study, poses a limitation in the present study. However, efforts were made to tackle this bias. Despite using a survey (common method) to measure all the variables, data collection for each variable was done at different points in time, ensuring sufficient time intervals in between and reducing the likelihood of participants responding consistently across variables. To reduce social desirability bias, participants were encouraged to provide honest responses by assuring them of the anonymity and confidentiality of their responses. Nevertheless, given the reliance on self-report measures, some degree of social desirability bias may still be present in the data. Furthermore, different statistical analyses incorporating variables such as resilience, coping strategies, personality traits and social support may yield valuable insights.

Conclusion

Despite these limitations, this study sheds light on the profound experiences of loneliness among securely attached individuals during a period of limited social interactions. It raises important questions for future investigation, including the role of age, personality traits, coping mechanisms, and resilience in relation to psychological distress and loneliness. The present study also builds on a handful of studies that elucidate the advantages of insecure attachment styles with regard to individual and group survival in threatening conditions and reproductive fitness in certain ecological conditions that securely attached individuals do not exhibit, particularly in dangerous and threatening

situations (Belsky et al., 1991; Belsky et al., 2010; Ein-Dor et al., 2010). Together, these findings have theoretical and practical implications, serving as a foundation for understanding insecure attachment styles and their potential for fostering healthy relationships and healthy functioning, and can inform interventions aimed at promoting healthy relationships.

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