

The Mediating Role Of Resilience Between Different Sources Of Loneliness And Depression Among University Students

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Abstract

Transitioning into adulthood brings about new challenges for university students, and one of the significant issues is loneliness. The current study aimed to explore the experience of different types of loneliness (family, romantic, and social) among male and female university students and its relation to resilience and depression. This study also explored the mediating role of resilience between different types of loneliness and depression. Two hundred university students (18-24 years of age) completed self-report questionnaires measuring loneliness, resilience, and depression. The results indicated no gender differences in different kinds of loneliness, and romantic loneliness was higher among university students than family and social loneliness. A low-to-moderate positive significant relationship exists between social loneliness and romantic loneliness and between social loneliness and family loneliness. All three kinds of loneliness negatively predict resilience and positively predict depression. Moreover, results showed that resilience partially mediated the relationship between family loneliness and depression. The findings have important implications in highlighting the role of different types of loneliness and resilience in health outcomes among university students. Interventions focusing on improving resilience may play an essential role in alleviating loneliness among university students.

Keywords: loneliness, resilience, depression, university students.

Introduction

Humans are motivated by a strong need to belong and a desire to connect, form, and maintain long-lasting interpersonal relationships (Baumeister & Leary, 1995). Being socially connected is crucial for psychological and emotional health, but it also has a substantial and positive impact on physical health (Uchino, 2006). Individuals may experience loneliness if they are prevented from forming meaningful relationships. Loneliness is the discrepancy between an individual's anticipated and actual levels of social participation (Perlman & Peplau, 1981). Loneliness is different from related concepts such as social isolation, solitude, and aloneliness (de Jong-Gierveld et al., 2006; Coplan et al., 2019; Larson, 1990; Tillich, 1959; Lay et al., 2020). Solitude is considered an experience of everyday life or being alone for a positive purpose (Larson, 1990; Tillich, 1959; Lay et al., 2020). Social isolation measures the objective state of social interactions (de Jong-Gierveld et al., 2006). Aloneness is believed to result from a disparity between the perception of the amount of time we spend alone and the amount of time we would prefer to spend alone (Coplan et al., 2019). A focus on loneliness recognises that an individual's perception of significant social contacts makes them feel lonely (Poscia et al., 2018).

Loneliness in emerging adults

Loneliness is detrimental to public health and increases premature mortality (Holt-Lunstad et al., 2015). Loneliness is pervasive and experienced across all demographics. However, there is a "nonlinear" U-shaped distribution with the highest loneliness levels reported by individuals under 25 years and those aged 55 years and over, and the lowest rates of 5% for the 25–44-year age group (Luhmann & Hawkley, 2016; Victor & Yang, 2012). Victor and Yang (2012) reported that 6% of adults felt lonely always or most of the time. Whereas 21% of adults sometimes felt lonely in their assessment of individuals of the United Kingdom.

Loneliness is particularly salient among university students. Emerging adulthood and transition from school to university disrupt earlier connections. Past relationships between students cannot be transferred to new environments (e.g. a new city). Emerging adults need to establish new friendships or romantic relationships (Asher & Weeks, 2013) to adapt to various challenges. Moreover, from a developmental

perspective, emerging adulthood requires the formation of new intimate relationships as a critical developmental task (Erikson, 1968), but failing to do so may lead to the experience of loneliness. Diehl et al. (2018) found that 32.4% felt moderately lonely and 3.2% severely lonely in a study on German college students. Similarly, Hysing et al. (2020) found an increase in loneliness levels among college students in Norway from 2014 (16.5%) to 2018 (23.6%), with higher levels of loneliness for younger and oldest students.

Relationship between loneliness and depression

Therefore, university life may be a significantly more vulnerable period for experiencing psychological and emotional maladjustment. Along with loneliness, mild to severe depression symptoms have been identified among university students. For example, the prevalence of university students in a recent Australian university diagnosed with mild to severe depressive symptoms was 39.5%, with 13% being in the extreme range (Schofield et al., 2016). Loneliness is a precursor to the development of depression (Cacioppo et al., 2010; Matthews et al., 2016). In a large scale meta-analysis, Erzen and Çikrikci (2018) found that loneliness has a similar moderate significant effect on depression for patients, students, and the elderly, showing that this relationship may exist across age groups and different populations. Some studies have stated that the association between loneliness and depression is reciprocal (Han & Richardson, 2010; Liu et al., 2016; Sahin & Tan, 2012). However, more recent studies, particularly longitudinal investigations, have shown that while loneliness generally predicts an increase in depressive symptoms, an increase in depressive symptoms does not necessarily predict loneliness (Cacioppo et al., 2010; Luanaigh & Lawlor, 2008; Park et al., 2013). Millions experience the effect of loneliness, and these pervasive experiences may lead to other mental health issues, especially among university students. However, not everyone with loneliness experiences issues such as depression, which suggests that other variables mediate the relationship between these variables. One such variable can be resilience.

Relationship between loneliness, resilience and depression

Resilience is an adaptive process in response to threatening, stressful, or traumatic adverse experiences or the ability to bounce back from challenging life condition (American

Psychological Association, 2011). Wingo et al. (2010) define resilience as the ability to adapt effectively to adversity. Studies have shown that resilient individuals have better coping skills than non-resilient individuals, which help them manage stressful situations effectively (Flach, 1988; Patterson, 1991; Wagnild & Young, 1990). According to Connor and Zhang (2006), resilience is an essential treatment goal for anxiety and depression. Less resilient individuals tend to report higher levels of depression (Smith & Hollinger-Smith, 2015). Some studies also show that resilience significantly mediates depression severity (Aroian & Norris, 2000; Wingo et al., 2010). A previous study by Liu et al. (2015) on patients with heart failure found that resilience mediates the relationship between depressive symptoms and heart failure. Therefore, resilience seems to be a protective factor for depression symptoms.

Although relationships between loneliness, resilience, and mental health have been explored, a recent study on drug users reported that resilience partially mediates the relationship between loneliness and depression (Cao & Liu, 2020). Most of the studies have focused on the ageing and geriatric population, focusing on overall mental health (Fry & Keyes, 2010; Wild et al., 2013; Gerino et al., 2017; Zhao et al., 2018). Secondly, studies focusing on young adults measure loneliness in terms of intensity of experience, ignoring the source of loneliness (Perron et al., 2014; Pakdaman et al., 2016; Kidd & Shahar, 2008). Few studies have explored the relationship between loneliness, resilience, and depression among university students using a multi-dimensional approach to loneliness (Jakobsen et al., 2020).

Theoretical perspectives

The study is guided by two theoretical perspectives on loneliness. First, The Evolutionary theory of loneliness (Cacioppo & Cacioppo, 2018) predicts that loneliness has long term mental and physical consequences. According to this theory, the experience of loneliness is similar to physical pain (Cacioppo & Patrick, 2008). Social connections have been deemed to be the primary behavioural adaptation of human and nonhuman primates and provide protection from the threat of predation and scarcity of resources (Silk, 2000). Prolonged loneliness triggers an attentional bias towards social threat that casues a loop of loneliness leading to negative consequences which in turn may evolve into mental health

issues. The drawback of most studies following the ETL is that loneliness is conceptualised as an unitary construct focusing only in terms of frequency and intensity.

Moving away from the single dimensional viewpoint of loneliness. The second theoretical perspective of this study is the social needs perspective on loneliness described by Weiss (1973). Based on Bowlby's (1969) attachment theory, the social needs perspective conceptualise loneliness into two types: emotional and social loneliness. Emotional loneliness is caused by a lack of close emotional ties with a spouse and parents, whereas social loneliness is caused by insufficient social ties with friends and peers. This differentiation was further divided into three categories of loneliness and led to the development of a multi-dimensional measurement of loneliness (DiTommaso & Spinner, 1993). Recently, Cacioppo et al. (2015) created a framework to connect different aspects of loneliness, such as (a) intimate loneliness, (b) relational loneliness, and (c) collective loneliness. These three dimensions correspond to attentional space (Hall, 1963, 1966). Intimate space is the closest space surrounding a person, and intimate loneliness is caused by the perceived absence of a significant other (e.g., a spouse). Similarly, social space is where people feel comfortable interacting with family and friends. The perceived absence of quality friendships or family connections leads to the experience of relational loneliness. Finally, because public space is situational, the lack of an active network (e.g., group, school, team, or national identity) leads to collective loneliness (Cacioppo et al., 2015). Therefore the study attempts to contribute to the multi-dimensional literature on loneliness, which will elicit under-explored relationships among the variables of interest.

The Current study

Firstly, the researchers argue that gender differences in different dimensions of loneliness are likely because men and women may have different needs for social support during their transition to university years. Women, for example, may have more intimate ties with family members than men, resulting in different levels of loneliness (Maes et al., 2015). Similarly, Dykstra and Fokkema (2007) stated that emerging adulthood in men might develop a greater need for a romantic partner. Failing to have a close partner may lead to a growing experience of romantic loneliness. Secondly, we identify the

relationship between different types of loneliness, resilience and depression among university students. Studies have shown that different types of loneliness are related to different forms of psychopathology (Lasgaard et al., 2011). Thirdly, we explore whether resilience mediates the relationship between different types of loneliness and depression among university students. Identifying the relationship is important to identify at risk lonely individuals and suggest resilient building training while focusing on the sources of loneliness. The following hypothesis were formulated:

H₁: There will be a difference in different dimensions of loneliness (family, romantic and social) among male and female university students.

H₂: All dimensions of loneliness (family, romantic and social) will significantly relate with resilience and depression.

H₃: Resilience will mediate the relationship between loneliness (family, romantic and social) and depression.

Method

Participants

A convenient sampling technique was used to recruit students of different departments of the University of Allahabad (Arts, Science and Law). A total of 220 participants were approached for the study. After collecting original data, 9% of participants were removed due to missing values and incomplete forms. 200 (91%) participants made the final pool. The age range was 20–24 years ($M = 22.03$ years. $S.D. = 1.18$). There were 85 (42.5%) female and 115 (57.5%) male participants. 59 % belong to nuclear family, and 41% are from joint family. 61% of participants are pursuing graduation, and 39% are post-graduation. 85% used at least three social media platforms. 26.8% spent less than 1 hour on social media, 31.7% more than one hour. 31.7 % spent 2 to 3 hours, and 9.8% spent more than 5 hours on social media daily.

Measures

Participants completed a questionnaire that asked about participant demographic details, their social media usage, their living situation (socially isolated or living with family/ friends/ roommates) and self-report measures related to loneliness, resilience, and depression.

1. Social and Emotional Loneliness Scale for Adults (SELSA-S):

Loneliness was measured using (SELSA-S) developed by DiTommaso et al. (2004). This is a short version of the original SELSA scale developed by DiTommaso and Spinner (1993), consisting of 37 items. The SELSA-S produces a global loneliness score based on 15 items and scores for three domains of loneliness: family, romantic, and social. Higher scores on the scale indicate higher perception of loneliness. The items in SELSA-S are answered following a Likert scale from 1 (strongly disagree) to 7 (strongly agree). Prior to data collection, the SELSA-S was translated to Hindi by the first author, back-translated by a bilingual psychologist (PhD) with proficiency in both Hindi and English, and then evaluated by the first author. Three separate scores of loneliness were used for this study. Cronbach's alpha of social loneliness is 0.72, family loneliness is 0.68, and romantic loneliness is 0.64.

2. Brief Resilience Scale (BRS):

Psychological Resilience was assessed with the 6-item Brief Resilience Scale (BRS) developed by Smith et al. (2008). The scale measures self-report by the respondent's ability to bounce back from stress on a scale ranging from 1 (strongly disagree) to 5 (strongly agree). Sample statements included: "I tend to bounce back quickly after hard times," "It does not take me long to recover from a stressful event," and "I usually come through difficult times with little trouble." The scale was back-translated using the similar method mentioned above. The Cronbach's alpha is 0.62.

3. General Health Questionnaire (GHQ-28):

Depression was measured using the GHQ-28, developed by Goldberg (1978). It is a widely used screening tool to detect those likely to have or be at risk of developing psychiatric disorders. The GHQ-28 has four subscales: somatic symptoms (items 1–7), anxiety/insomnia (items 8–14), social dysfunction (items 15–21), and severe depression (items 22–28). For the purpose of the study, items measuring severe depression were only used. The Cronbach's Alpha is 0.77

Procedure

The participants were recruited within university, the author distributed forms to prospective participants. The questionnaires were administered with group of students, and participation was voluntary. The participants were assured of confidentiality of data and anonymity of identity. Students were also informed about their freedom to withdraw their

participation without consequences if they felt any discomfort. The study was conducted within the ethical guidelines of the Institutional Ethics Review Board (IERB), University of Allahabad.

Analysis

Descriptive and inferential statistics were performed using the Jamovi Project (2020). Three mediation models were generated with types of loneliness as predictor, resilience as the mediator, and depression as the criterion variable. Bootstrap estimation methods were used with 5000 bootstrap samples and corrected biases at 95% confidence intervals (CI) to assess the indirect effect of each variable. If the range of the CI did not contain zero for a specific effect, it indicated that the indirect effect was significant. The significant level was set at $p < .05$ (two-tailed).

Results

Table 1: Comparison between gender and different types of loneliness

Loneliness	Gender	M(SD)	df	t	p
Family Loneliness	Female	10.67(4.86)	198	.536	.534
	Male	10.29(4.78)			
Romantic Loneliness	Female	20.26(6.60)	198	1.268	.542
	Male	19.05(6.73)			
Social Loneliness	Female	13.65(4.97)	198	.809	.996
	Male	13.06(5.00)			

Significant at the 0.01 level (2-tailed). **

Significant at the 0.05 level (2-tailed). *

The descriptive statistics (i.e., mean, SD) and t-test between gender and different types of loneliness (family, romantic, and social) are shown in Table 1. The results show no significant difference between male and female university students in three domains of loneliness: family, romantic and social loneliness.

Table 2: Bivariate correlations among variables

	1	2	3	4	5	Mean	S.D.
Family Loneliness	1.00	0.077	0.396**	-0.191**	0.319**	10.45	4.80
Romantic Loneliness		1.00	0.183**	-0.144*	0.051	19.57	6.68
Social Loneliness			1.00	-0.149*	0.063	13.31	4.98
Resilience				1.00	-0.318**	19.11	3.17
Depression					1.00	12.39	4.24

Correlation is significant at the 0.01 level (2-tailed).**

Correlation is significant at the 0.05 level (2-tailed).*

Bivariate correlation among study variables is present in Table 2. The results show that family loneliness is significantly related to social loneliness, and romantic loneliness is also related to social loneliness. However, family loneliness and romantic loneliness are not significantly correlated. All forms of loneliness are negatively related to resilience. Family loneliness and resilience are significantly related to depression.

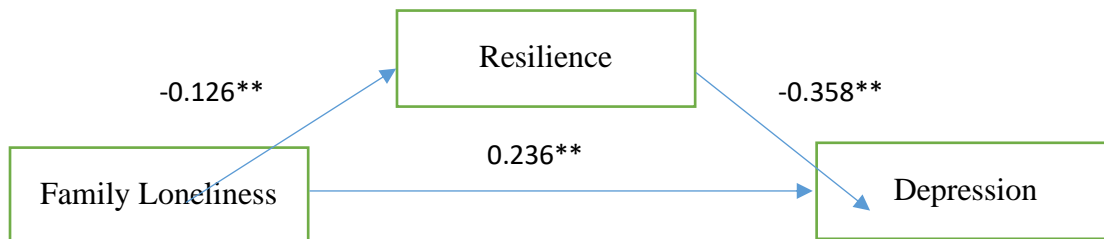


Fig. 1: Mediation of relationship between Family loneliness and Depression by Resilience.

Table 3: Indirect, Component, Direct and Total effects of the mediation model.

	Effect	Estimates	SE	95% C.I. (a)		p-value	% Mediation
				Lower	Upper		
Indirect	Family Loneliness \Rightarrow Resilience \Rightarrow Depression	0.045	0.018	0.014	0.084	0.013	16.0
Component	Family loneliness \Rightarrow Resilience	-0.126	0.046	-0.213	-0.038	0.006	----
	Resilience \Rightarrow Depression	-0.358	0.076	-0.503	-0.204	0.001	-----
Direct	Family loneliness \Rightarrow Depression	0.236	0.059	0.113	0.351	0.001	84.0
Total	Family loneliness \Rightarrow Depression	0.281	0.059	0.165	0.390	0.001	100.0

In this mediation model (Table 3) shows that resilience significantly mediate the relationship between family loneliness and depression (family loneliness \rightarrow resilience, resilience \rightarrow depression and family loneliness \rightarrow depression) were significant showing partial mediation of resilience between family loneliness and depression.

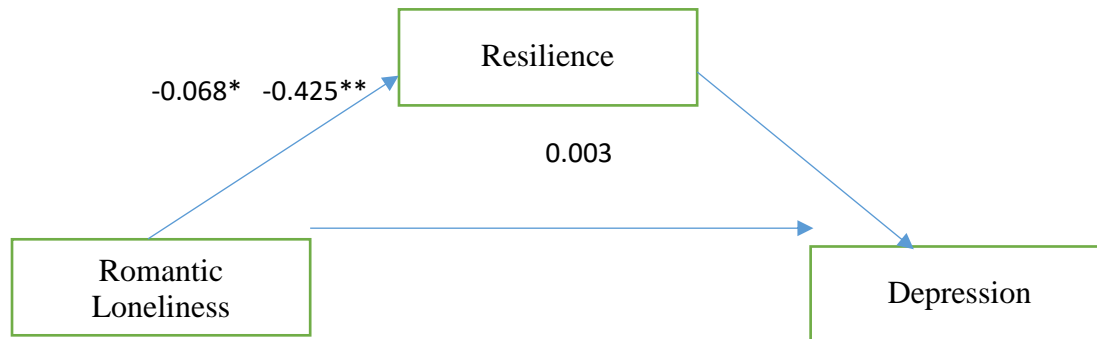


Fig. 2: Mediation of relationship between Romantic loneliness and Depression by Resilience.

Table 4: Indirect, Component, Direct and Total effects of the mediation model.

Type	Effect	Estimates	SE	95% C.I. (a)		p-value	% Mediation
				Lower	Upper		
Indirect	Romantic Loneliness \Rightarrow Resilience \Rightarrow Depression	0.029	0.015	0.002	0.064	0.067	88.7
Component	Romantic loneliness \Rightarrow Resilience	-0.068	0.031	-0.131	-0.006	0.032	----
	Resilience \Rightarrow Depression	-0.425	0.077	-0.583	-0.269	0.001	-----
Direct	Romantic loneliness \Rightarrow Depression	0.003	0.039	-0.080	0.077	0.926	11.3
Total	Romantic loneliness \Rightarrow Depression	0.326	0.044	-0.058	0.110	0.458	100.0

In this mediation model (Table 4) indirect, direct and total effect were found to be not significant, although the paths (romantic loneliness \rightarrow resilience and resilience \rightarrow depression) were significant. Resilience was not a significant mediator between romantic loneliness and depression.

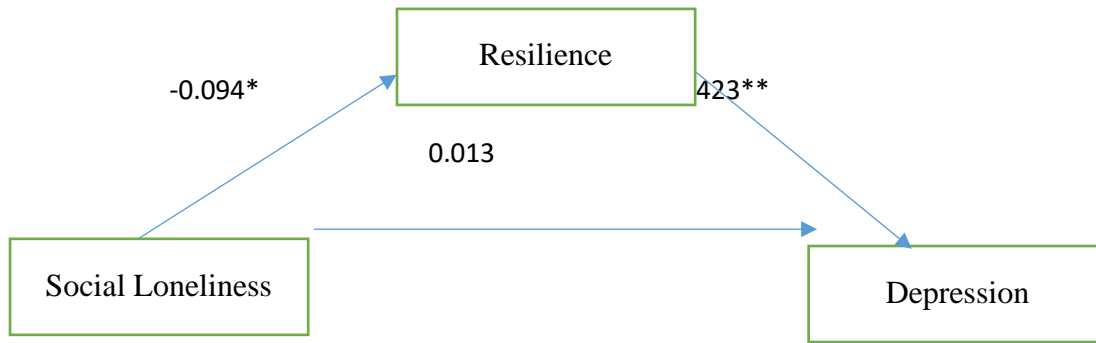


Fig. 3: Mediation of relationship between Social loneliness and Depression by Resilience.

Table 5: Indirect, Component, Direct and Total effects of the mediation model

Type	Effect	Estimates	SE	95% C.I. (a)		p-value	% Mediation
				Lower	Upper		
Indirect	Social loneliness \Rightarrow Resilience \Rightarrow Depression	0.040	0.019	0.005	0.082	0.041	75.1
Component	Social loneliness \Rightarrow Resilience	-0.094	0.042	-0.180	-0.011	0.028	----
	Resilience \Rightarrow Depression	-0.423	0.077	-0.574	-0.264	0.001	-----
Direct	Social loneliness \Rightarrow Depression	0.013	0.049	-0.040	0.114	0.787	24.9
Total	Social loneliness \Rightarrow Depression	0.053	0.051	-0.048	0.156	0.301	100.0

In this mediation model (Table 5) direct and total effect was found to be not significant, although the indirect path of social loneliness, resilience and depression was found to be significant along with the paths (social loneliness \rightarrow resilience and resilience \rightarrow depression). Resilience was not a significant mediator between social loneliness and depression.

Discussion

This study aimed to examine the multi-dimensional nature of loneliness in university students, including family, social, and romantic loneliness and whether male and female university students differ in their experience of loneliness. The researchers also investigated the relationship between different types of loneliness, resilience, and depression and whether resilience plays a role in mediating the relationship.

We did not find any significant gender differences in different types of loneliness (family loneliness, romantic loneliness, and social loneliness). Earlier studies have reported mixed findings on multi-dimensional loneliness (Adamczyk, 2017; Bernardon et al., 2011; DiTommaso et al., 2007; Pollet et al., 2018). Adamczyk (2017) found no gender differences in family and romantic loneliness, but male university students reported higher levels of social loneliness than women. Similarly, Bernardon et al. (2011) found no significant differences in romantic loneliness between men and women. DiTommaso et al. (2007) found no gender differences across three kinds of loneliness. Although women have more intimate ties with family and lack thereof leads to higher loneliness (Maes et al., 2015). Similarly, men have attached more emphasis to romantic partners (Dykstra & Fokkema, 2007) and an inadequate relationship may lead to higher levels of romantic loneliness than women. Based on the inconsistent findings, Pollet et al. (2018) analysed the multi-dimensional scale used in this study for gender differences and found no differences in the questionnaire structure. However, such inferences have been drawn from studies conducted in individualistic nations, and the notion of measurement invariance across gender among various forms of loneliness has not been tested in collectivist nations like India, particularly in the case of multidimensional loneliness.

As anticipated, students reported differences in their experiences of family, social, and romantic loneliness. We found that although levels of loneliness were moderate across different types of loneliness. Romantic loneliness was found to be higher than family loneliness and social loneliness. Similar findings by Bernardon et al. (2011) reported higher levels of romantic loneliness compared to family and social loneliness in a representative sample of undergraduate students from Canada. Similarly, DiTommaso et al. (2003) reported higher levels of romantic loneliness among male university students than family and social loneliness. One possible reason for high levels of romantic loneliness in university students is that developing romantic intimacy is a primary developmental task for young adults. The void of such relationships may lead to the experience of romantic loneliness.

Family loneliness is positively related to social loneliness. Romantic loneliness is also positively related to social loneliness, but family loneliness is not related to romantic loneliness.

Only family loneliness was significantly associated with depression in the relationship between different types of loneliness and depression. Other multi-dimensional studies reported similar findings on loneliness ex-: for example, Lasgaard et al. (2011) studied the relationship between different sources of loneliness and psychopathology among adolescents. They reported that family-related and social loneliness were associated with depression, anxiety and suicide ideation. The Evolutionary theory of loneliness (Cacioppo & Cacioppo, 2018) provides an explanation for this association. But studies embedded in individual cultures are interpreted in different light. Hawkley and Cacioppo (2010) found that individuals with a high level of loneliness experience higher levels of life dissatisfaction, leading to negative emotions that enhance depressive symptoms. This relationship might be reduced by enhancing resilience. Ai and Hu (2016) stated that higher levels of psychological resilience might help deal with adverse situations, reducing the likelihood of mental health issues (Cao & Liu, 2020).

All kinds of loneliness were negatively related to resilience, which was negatively related to depression. A similar relationship was found in earlier empirical study (Perron et al., 2014;). The higher levels of loneliness were associated with lower levels of resilience, and university students with higher levels of resilience showed lower levels of loneliness. The finding in the present cohort of negative relationships among loneliness, resilience, and depression suggests that a potential relationship exists between these variables. The mediating role of resilience was tested between different sources of loneliness and depression among university students to test this relationship. The relationship between family loneliness and depression was partially mediated by resilience, which reveals the underlying mechanism in the relationship among these variables. Previous studies found a similar mediating relationship (Cao & Liu, 2020; Gerino et al., 2017; Zhao et al., 2018). The result shows the effect of resilience as an essential resource for college students to overcome the negative effect of being lonely without developing depressive symptoms.

Although the other two mediating models were not significant, model 2 (romantic loneliness, resilience, and depression) and model 3 (social loneliness, resilience, and depression) were not significant. The path values of social

loneliness and resilience and romantic loneliness and resilience were significant, showing that higher loneliness in all dimensions of loneliness produces a detrimental effect on resilience. Although resilience was once considered a stable personality variable (Luthar & Cicchetti, 2000), there seems to be a consensus now that resilience can be enhanced and learned to deal with psychological disorders (Arnetz et al., 2013; Fletcher & Sarkar, 2013). Promoting resilience can enhance adaptive response, and according to the evolutionary theory of loneliness (Cacioppo et al., 2006), this can help re-energise the individual to rebuild their impaired social relationships.

Conclusion

To our knowledge, this is the first study on Indian university students examining the mediating effect of resilience between the multi-dimensional nature of loneliness (family, romantic, and social loneliness) and depression. The study found no gender differences in different types of loneliness, with higher levels of romantic loneliness in university students. Although all forms of loneliness were negatively related to resilience, which in turn was negatively related to depression, resilience only partially mediated the relationship between family loneliness and depression. The study revealed some novel findings that can enhance our understanding of how resilience can minimise the increasing effect of loneliness on depression.

Limitations

The present study is cross-sectional; therefore, causal inferences are not possible. Investigation of these associations will require longitudinal studies. The second limitation of the study is the reliance on self-report measures to measure the multi-dimensional nature of loneliness, as self-report measures lead to inaccurate and socially desirable biases. Third, the voluntary participation may have prevented the sample from being representative of Indian university students.

Future Directions

Future research can explore other kinds of loneliness, such as existential loneliness, which was outside the scope of the present study. Including more demographic factors such as having siblings and gender (Cao & Liu, 2020) which moderate

the uni-dimensional relationship of loneliness with depression, could be explored along the lines of the multi-dimensional nature of loneliness. Moreover, research can also examine whether gender differences exist in subscales of loneliness and resilience and whether these actions act differently for mental health issues like anxiety and depression. Future intervention studies on building resiliency could focus on reducing specific types of loneliness, such as family loneliness, because it is crucial to encourage family traditions. To reduce social loneliness, students should encourage more face-to-face social support programs. For university students with chronic loneliness, a pre-post intervention could be designed to determine the efficacy of resilience programmes. Future studies should also investigate more mental health outcomes from family, romantic, and social loneliness separately.

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