Getting by with a little help from friends and family: mediation model between loneliness and depressive symptoms amongst Portuguese students

Genta Kulari

Departamento de Psicologia, Universidade Autónoma de Lisboa, Lisboa, Portugal

Abstract

Purpose – The purpose of this study is to analyse the mediating effect of friends and family as sources of perceived social support in the relationship between loneliness and depressive symptoms. Design/methodology/approach – Survey data sample consisted of 733 university students from January to May 2023. Participants completed the UCLA loneliness scales, Multidimensional Scale of Perceived Social Support (MPSS) and Depression, Anxiety and Stress Scale (DASS-21). The SPSS programme with PROCESS macro (Model 6) was used to test the hypothesis regarding the mediation effect. Findings – The bootstrap analysis found that friends as a source of social support mediated the relationship between loneliness and depressive symptoms. Similarly, loneliness had a significant indirect effect on depressive symptoms through the mediation of family as a source of social support. Moreover, it was found that the relationships of friends and family as sources of social support mediated the association of the aforementioned variables. Originality/value – This research advances our understanding of social support sources from friends and family amongst university students whilst providing suggestions for interventions tackling loneliness and depressive symptoms in a university setting. Keywords Loneliness, Depressive symptoms, Sources of social support, University students

Paper type Research paper

Introduction

University students are more prone to feel lonely and hopeless (Neto and Mullet, 2020). This is one of the many pleas for help which research and practitioners are being confronted with today. Literature on loneliness indicates that this phenomenon is taking a near-epidemic proportion in Western countries (Cacioppo and Cacioppo, 2018). Moreover, loneliness is associated with disorders such as depression, suicide, alcoholism and psychosomatic illnesses that can lead to the predisposition towards certain diseases (Cole et al., 2015; Holt-Lunstad and Perissinotto, 2023). Besides the radical changes university life incites in students, the pressure to achieve academic standards, frequent assessments, competitive learning, lack of time for self-care and interaction with family and friends can all heavily impact feelings of loneliness (Agadullina et al., 2021). Peplau and Perlman (1982) defined loneliness as a subjective, negative experience associated with the sense of having fewer social contacts than desired. Particularly, studies in Portugal are emphasising the need for more research measuring the magnitude and distribution of loneliness amongst university students, especially when considering that the perception of loneliness is one of the most central features associated with the quintessentially Portuguese experience of saudade (Neto and Mullet, 2020; Neto, 2021). Saudade originates from the Latin word solitute, meaning loneliness, corresponding to feeling of melancholic longing, loss, absence and incompleteness (Paiva, 2022). Portuguese people have embodied saudade in their cultural background,
displayed in their melancholic attitude towards life. Therefore, it is imperative to uncover resources that can help keep loneliness at bay amongst Portuguese students.

**Literature framework and hypothesis development**

*Loneliness relationship to depressive symptoms*

Compared to other European countries, Portugal has been distinguished for its strong reliance in family, prolonged co-residence with parents, late transition to conjugal union and therefore, parenthood (Oliveira et al., 2014). One potential explication is the transition to labour market, which offers low-paid and precarious work contracts (Rokach and Neto, 2000). Therefore, young adults circulate in a pending situation to eventually return to university for further qualifications, thus prolonging their student status and further deepening their dependence on family support. Moreover, recent research amongst 3,143 university students in Portugal, found that 61.9% manifested depressive symptoms (Santos and Pinho, 2023). The study reported that depressive symptoms caused difficulties fulfilling their academic obligations and constructing social relations, which can lead to loneliness.

As courses progress and become more complex, academic pressure increases and triggers intensive feelings of depression (Heumann et al., 2023). Students’ depressive condition is a serious mental health concern with its association to suicidal risk. Despite the empirical and theoretical distinction between loneliness and depression, people frequently describe loneliness symptoms in terms of depression and depressive symptoms in terms of loneliness (Owczarek et al., 2022). To date there is a dearth of literature analysing loneliness and depressive symptoms amongst Portuguese students, as the mainstream of literature is focussed on elderly population. The present study aims to address this vacuum and analyse the direct effect of loneliness in depressive symptoms in order to delve on the impact of loneliness amongst Portuguese students.

**H1.** Loneliness is positively associated with depressive symptoms amongst university students.

*Perceived social support from friends and family as mediator between loneliness and depressive symptoms*

Perceived social support is considered one of the strongest antidotes to loneliness. It refers to beliefs about the quantity and quality of support that is potentially available from a person’s relationships and social contacts (Bone et al., 2023; Marley and Wilcox, 2022). It is a subjective evaluation of how individuals perceive friends, family members and others as available to provide overall support during times of need (Grey et al., 2020; Zimet et al., 1988). Supportive relationships from family and friends in particular have provided improvements in students’ academic performance, dealing with life problems, improving general adaptiveness and reducing loneliness and depressive symptoms (Moeller and Seehus, 2019). Although most university students do not live with their parents, parents will play a supportive role, particularly in the Portuguese culture (Adams et al., 2000).

Furthermore, as students transition to university life, they report feeling close to their parents (Fitzgibbon and Prior, 2010). Hence, high levels of parental support are related to decreased loneliness amongst university students (Mo and Bai, 2022; Lashari et al., 2023). Furthermore, attachment theorists suggest that once students enter university, peers replace a parent as provider of emotional support (Ainsworth, 1989). Peers may become similarly important as parents in predicting loneliness amongst university students (Agadullina et al., 2021). However, to date few studies have analysed the impact of different sources of social support on loneliness amongst university students. Considering the prolonged reliance on family in Portuguese culture, the present study attempts to fill this gap by analysing the
mediating role of friends and family sources of social support on the relationship between loneliness and depressive symptoms amongst university students in Portugal. Therefore, based on the previous literature, the present study proposed to test the following hypothesis.

H2. Social support from friends plays a mediating role between loneliness and depressive symptoms amongst university students.

H3. Social support from family plays a mediating role between loneliness and depressive symptoms amongst university students.

H4. Social support from friends and family mediates the relationship between loneliness and depressive symptoms amongst university students through their chain mediating effect.

Methodology
Participants and procedure
According to Victor and Yang (2012), loneliness reaches its peak in the early 20s, corresponding to university years, which coincides with the peak of mental health concerns, as evidenced by van der Werf et al. (2014). Therefore, the present study followed a cross-sectional design including 733 students recruited by convenience sampling attending university in the metropolitan area of Lisbon. The questionnaires were distributed individually to every participant. The study received approval by the Autónoma University of Lisbon Ethical Committee. All questionnaires were anonymous and proceeded on paper including the informed consent which presents participants the purpose of the study. No questionnaire was collected without consent. All the privacy rights of the participants were respected (we asked no information that could allow the identification of the subject). A total of 800 questionnaires were received from the data collection, with 67 of these excluded from the sample due to missing data. Inclusion criteria consisted of students enrolled in university at the moment of data collection over 18 years old. Participants completed a 20-min questionnaire composed of two sections. The first section included three instruments (UCLA Loneliness Scale, Perceived Social Support Scale and DASS-21), followed by the second section reporting data on socio-demographic characteristics such as age, sex, course schedule, marital status, number of children and number of people they cohabitate. Data collection occurred from January to May 2023. The mean age of the sample was 24.99 (SD = 9.16), where 56.48% identified as female and 43.52% men. See Table 1 for all socio-demographic characteristics.

Materials and measures
Independent variable: UCLA Scale (University of California, Los Angeles, Version 3; Russell et al., 1980) was used to measure loneliness. The scale is composed of 20 items rated on a 4-point Likert scale from 1 (never) to 4 (always). All items were summed to provide a loneliness score ranging from 20 to 80, whereby a higher score indicates greater loneliness. The instrument has a very good reliability coefficient of 0.94 and is the most worldwide used scale. The scale was translated and validated in Portuguese language by Pocinho et al. (2010). In our study the Cronbach alpha of the instrument was 0.929.

Mediator variable: Perceived social support was measured through Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet et al., 1988). The MSPSS has three dimensions: perceived social support from family, friends and significant others. Each dimension is composed by 4 items rated on a Likert scale from 1 (very strongly disagree) to 7 (very strongly agree) ranging from 4 to 28. Higher scores for each dimension indicate higher level of perceived social support from friends, family and significant others. The scale was
translated and validated in Portuguese by Carvalho et al. (2011). For the purpose of this study, perceived social support from family and friends are going to be considered as two mediators of the proposed model. The original scale has a good reliability coefficient for family 0.87 and friends 0.85. In this study the reliability coefficient are shown in Table 2.

**Dependent variable**: Depressive symptoms were measured using Depression, Anxiety, Stress scale (DASS-21; Lovibond and Lovibond, 1995). DASS-21 has three subscales: depressive symptoms, anxiety and stress, composed of 21 items to measure the severity and frequency of experiencing symptoms of depression, anxiety and stress experienced in the last week. Each subscale is composed by 7 items rated on 4-Likert scale from 0 (did not apply to me at all) to 3 (applied to me very much, or most of the time). In the present study, we are going to

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Items</th>
<th>Scale range</th>
<th>Description</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV: Loneliness</td>
<td>20</td>
<td>1 (Never) – 4 (Always)</td>
<td>“I have nobody to talk to”</td>
<td>0.929</td>
</tr>
<tr>
<td>DV: Depressive symptoms</td>
<td>7</td>
<td>0 (Did not apply to me at all) – 3 (Applied to me very much)</td>
<td>“I couldn’t seem to experience any positive feeling at all”</td>
<td>0.885</td>
</tr>
<tr>
<td>M1. Social support from friends</td>
<td>4</td>
<td>1 (Very Strongly Disagree) – 7 (Very Strongly Agree)</td>
<td>“I can talk about my problems with my friends”</td>
<td>0.935</td>
</tr>
<tr>
<td>M2. Social support from family</td>
<td>4</td>
<td>1 (Very Strongly Disagree) – 7 (Very Strongly Agree)</td>
<td>“My family really tries to help me”</td>
<td>0.931</td>
</tr>
</tbody>
</table>

**Table 1.**
Socio-demographic factors (N = 733)

**Source(s):** Author’s own work
use only the depression symptoms dimension which assesses lack of interests/involvements, devaluation of life, self-depreciation and hopelessness. Items of depressive symptoms subscale were summed to provide a total score ranging from 0 to 21. Higher scores indicated higher levels of depressive symptoms. The scale has a good reliability coefficient for depressive symptoms subscale 0.94, and in this study, it indicated a good Cronbach alpha of 0.885. The instrument was translated and validated in Portuguese by Pais-Ribeiro et al. (2004).

Data analysis
First, correlation analysis was conducted to examine the association amongst loneliness, perceived social support from friends and family and depression symptoms. Then, independent mediation analysis was conducted to test whether social support from friends and family significantly mediated the relationship between loneliness and depressive symptoms. To determine mediation, bootstrapping (5,000 samples) was performed using the Process model (V.3.4, SPSS; Hayes, 2022). Two-sided bias-corrected 95% CIs were constructed to evaluate the indirect effect. As recommended by the author Hayes (2013), these values are neither set nor standardised. The model fit was assessed with the consultation of a range of the more reliable fit indices (Hu and Bentler, 1999), namely, relative chi-square statistic ($\chi^2$/df), the root mean square error of approximation (RMSEA), comparative fit index (CFI), Tucker–Lewis index (TLI) and standardised root mean squared residual (SRMR).

Results
Test of validity and common method bias
The present study used self-reporting method and common method bias (CMV) may occur (Podsakoff et al., 2012). To further improve the rigour of the study, we used the Harman’s single factor test to verify common method deviation before data analysis which revealed a single largest factor that explained 21.14% of the variance. Given this result, we were confident that CMV effects were not present (the variance explained by the first factor without rotation was below 50%) (Podsakoff et al., 2012).

We then performed a confirmatory factor analysis (CFA) to assess whether or not the measurement model adequately fits the sample data using AMOS V28 SPSS. The initial test of measurement model revealed a satisfactory fit ($\chi^2$ (df = 107) = 407.7, $\chi^2$/df = 3.81 (>3); RMSEA = 0.04 (<0.06); SRMR = 0.03 (<0.08); CFI = 0.96 and TLI = 0.98). All the factor loadings for the indicators on the latent variables were significant ($p < 0.001$), indicating that all the latent constructs are well-represented by their indicators (Hu and Bentler, 1999).

Correlations
Correlations analysis for the sample is reported in Table 3. Loneliness was negatively correlated with social support from family ($r = -0.369, p < 0.001$) and social support from friends ($r = -0.473, p < 0.001$), but had a positive correlation with depressive symptoms ($r = 0.486, p < 0.001$). Similarly, depressive symptoms showed a negative correlation with

<table>
<thead>
<tr>
<th>Variables</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loneliness</td>
<td>1.920</td>
<td>0.557</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Depressive symptoms</td>
<td>0.6530</td>
<td>0.664</td>
<td>0.486**</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Social support from family</td>
<td>5.560</td>
<td>1.389</td>
<td>–0.369**</td>
<td>–0.270**</td>
<td>–</td>
</tr>
<tr>
<td>Social support from friends</td>
<td>5.622</td>
<td>1.160</td>
<td>–0.473**</td>
<td>–0.161**</td>
<td>0.380**</td>
</tr>
</tbody>
</table>

Note(s): **$p < 0.001$
Source(s): Author’s own work

Table 3. Means, standard deviation and correlations between study variable (N = 733)
social support from family ($r = -0.270, p < 0.001$) and social support from friends ($r = -0.161, p < 0.001$). Finally, social support from family had a positive correlation with social support from friends ($r = 0.380, p < 0.001$). Therefore, the significant correlation between research variables provides a good foundation for the subsequent research hypothesis and mediation analysis.

Testing the mediation effect

Based on the results of the correlation analysis and the present study hypothesis that social support from friends and social support from family mediate the relationship between loneliness and depressive symptoms, it was used PROCESS model 6 to test the mediating model. The first regression analysis tested the effects of loneliness on social support from friends (path a1). As explained by Cacioppo and Cacioppo (2014) lonely individuals are more likely to see the social world as a void place, expect more negative social interaction and remember more negative social information. Despite their access to considerable support from others, this may have nothing to do with sharing good times, it may come at a cost, or it may come other than the person with whom an individual aspires connection. Therefore, loneliness can become a risk factor for social connections. The second regression model tested the combined predictive effects of loneliness and social support from friends on social support from family (paths a2 and d). The third regression predicts the depressive symptoms by the independent variable loneliness and the two mediators (paths b1, b2 and c'). Here, path c' depicts the direct effect of social support on the depressive symptoms controlled for the effects of the two mediators. In contrast, path c indicates the total effect of loneliness on depressive symptoms without considering the mediators (see Figure 1).

Model indices are depicted in Table 4. First, in the path of a1→b1, loneliness had a significant negative effect on social support from friends ($\beta = -0.983, p < 0.001$), whilst social

![Hypothesised model](image)

Source(s): Authors own work

<table>
<thead>
<tr>
<th>Model</th>
<th>Outcome</th>
<th>Predictors</th>
<th>$\beta$</th>
<th>SE</th>
<th>t</th>
<th>LLCI</th>
<th>ULCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>SS Friends</td>
<td>Loneliness</td>
<td>-0.983</td>
<td>0.0654</td>
<td>-15.0455***</td>
<td>-1.118</td>
<td>-0.8552</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$R^2 = 0.223, F = 226.36***$</td>
<td></td>
</tr>
<tr>
<td>Model 2</td>
<td>SS Family</td>
<td>Loneliness</td>
<td>-0.603</td>
<td>0.0911</td>
<td>-6.6260***</td>
<td>-0.7825</td>
<td>-0.4248</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$R^2 = 0.193, F = 93.7848***$</td>
<td></td>
</tr>
<tr>
<td>Model 3</td>
<td>DS</td>
<td>Loneliness</td>
<td>0.561</td>
<td>0.0435</td>
<td>12.9064***</td>
<td>0.4765</td>
<td>0.6474</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$R^2 = 0.239, F = 82.1942***$</td>
<td></td>
</tr>
</tbody>
</table>

Note(s): SS, social support and DS: depressive symptoms; ***$p < 0.001$
Source(s): Author’s own work

Table 4. Results of regression analysis (N = 733)
support from friends had a significant positive effect on depressive symptoms ($\beta = 0.064, p < 0.001$). In the path of $a2 \rightarrow b2$, loneliness had a significant negative effect on social support from family ($\beta = -0.603, p < 0.001$), whilst social support from family had a significant negative effect on depressive symptoms ($\beta = -0.067, p < 0.001$). In the path of $a1 \rightarrow d \rightarrow b2$, social support from friends had a significant positive effect on the social support from family ($\beta = 0.325, p < 0.001$). The present results supported our study hypothesis.

For the prediction of depressive symptoms as shown in Table 5, loneliness was statistically significant and a positive predictor (effect of $c = 0.5609, p < 0.001$) in the total effect model without consideration of the mediators. The direct effect remained significant [effect of $c' = 0.5619, p < 0.001; 95\% CI (0.4868, 0.6351)$], whereas the total indirect effect was negative and significant [total indirect effect $= -0.0010, p < 0.001; 95\% CI (-0.0464, 0.0448)$]. Correspondingly, all three possible indirect effect were significant [effect of $a1 \rightarrow b1 = -0.0632, p < 0.001; 95\% CI (-0.1095, 0.0682); effect of $a2 \rightarrow b2 = 0.0407, p < 0.001; 95\% CI (0.0177, 0.0682); effect of $a1 \rightarrow d \rightarrow b2 = 0.0216, p < 0.001; 95\% CI (0.0088, 0.0384)$].

**Discussion**

The present study included university students as participants and aimed to investigate whether students’ perceived social support from friends and family mediated the association between loneliness and depressive symptoms. To this aim, this study found that loneliness had a positive direct effect on depressive symptoms amongst university students, which is consistent with Owczarek et al. (2022) and Fitzgibbon and Prior (2010). Hence, students who perceived higher levels of loneliness during university years also experienced higher levels of depressive symptoms. Given the very subjective nature of loneliness, individuals develop an internal standard of expectations against which they judge their interpersonal relationships. Thus, if their relationships meet these internal standards, individuals feel satisfied and do not experience feelings of loneliness (Peplau and Perlman, 1982). Victor and Yang (2012) reported that loneliness varies in age, however, its relation to depression remains stable across the lifespan. Moreover, Matthews et al. (2016) reported that elevated levels of loneliness amongst university students are highly correlated with the major life transitions accompanying the university experience, such as completing studies, finding a job, gaining independence from parents, struggling with financial instability and building social contacts, which in turn can trigger symptoms of depression. As a result, depression manifests symptoms such as low motivation, lack of self-worth, reduced energy and interest, which can heavily impact students’ success whilst attempting to fulfil their academic requirements (Heumann et al., 2023). Hence, recognising the strong relation between loneliness and depressive symptoms, the present study attempts to raise awareness amongst academic staff, understanding the implications of loneliness on students’ mental health and, therefore, achievement in university.

<table>
<thead>
<tr>
<th>Model</th>
<th>Effect</th>
<th>SE</th>
<th>LLCI</th>
<th>ULCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total effect ($c$)</td>
<td>0.5609</td>
<td>0.0378</td>
<td>0.4868</td>
<td>0.6351</td>
</tr>
<tr>
<td>Direct effect ($c'$)</td>
<td>0.5619</td>
<td>0.0435</td>
<td>0.4765</td>
<td>0.6474</td>
</tr>
<tr>
<td>Total indirect effect</td>
<td>-0.0010</td>
<td>0.0231</td>
<td>-0.0464</td>
<td>0.0448</td>
</tr>
<tr>
<td>Loneliness $\rightarrow$ SS friends $\rightarrow$ DS ($a1 \rightarrow b1$)</td>
<td>-0.0632</td>
<td>-0.229</td>
<td>-0.1095</td>
<td>0.0682</td>
</tr>
<tr>
<td>Loneliness $\rightarrow$ SS family $\rightarrow$ DS ($a2 \rightarrow b2$)</td>
<td>0.0407</td>
<td>0.0129</td>
<td>0.0177</td>
<td>0.0682</td>
</tr>
<tr>
<td>Loneliness $\rightarrow$ SS friends $\rightarrow$ SS family $\rightarrow$ DS ($a1 \rightarrow d \rightarrow b2$)</td>
<td>0.0216</td>
<td>0.0076</td>
<td>0.0088</td>
<td>0.0384</td>
</tr>
</tbody>
</table>

**Note(s):** SS: social support and DS: Depressive symptoms

**Source(s):** Author’s own work

---

*Table 5.* Total, direct and indirect effects of loneliness on depressive symptoms.
Moreover, results showed that loneliness has an indirect effect on depressive symptoms through the mediating effect of perceived social support from friends. Previous studies have reported that social relationships can decrease loneliness and therefore, decrease depressive symptoms (Surkalim et al., 2022; Bone et al., 2023). Having friends is considered to be a very desirable aspect of modern social life, with mass media intensifying the connection between success in social relationships and popularity. Therefore, lacking friends in a culture that values friendship would cause social and psychological discomfort. Once entering university, students need to re-evaluate their past relationships with friends, parents, professors and learn how to deal with the separation process whilst creating their own self-image. Therefore, university students value the quantity of relationships as a strategy to protect themselves from loneliness (Victor and Yang, 2012). Contrarily, avoiding contact with others can cause feelings of social isolation, which can lead to depression when faced with new social situations. Consequently, students report having more frequent contact with friends compared to other age groups (Robison et al., 2017). Moreover, Mo and Bai (2022) found that students with greater social support from friends report better mental health conditions. The effect of perceived social support from friends is so crucial that students who have a higher social engagement are more likely to remain in higher education and be successful (Fitzgibbon and Prior, 2010). Considering the high prevalence of depression amongst Portuguese students and its significant relation to loneliness, several universities have implemented psychological intervention programmes. However, due to the scarcity of studies amongst university students and loneliness, it is unclear whether these interventions are suited in this setting. The present study provides significant data on the impact of friends’ social support in loneliness and depressive symptoms. Hence, it is imperative for universities to promote social interaction through programmes aimed towards social collaboration, group intervention and solidarity action, in order to improve social skills amongst university students as well as opportunities to build communication and cooperation.

Similarly, family as a source of social support also played an indirect effect on depressive symptom. In accordance with existing literature, lack of family support has been linked to loneliness and, therefore, depressive symptoms (Adams et al., 2000; Marley and Wilcox, 2022). Perceived family social support sets the standard for the expected level of support from other sources (Zimet et al., 1988). Research has demonstrated that family support remains critical in promoting young adults’ adjustment and well-being, including social or interpersonal relationships (Marley and Wilcox, 2022). Moreover, Vallerand (2012) found that social factors such as support can increase the motivation to achieve success. Portugal is considered a collectivist society, with very strong ties with the nuclear family (Neto and Mullet, 2020). Despite social and personal changes during the university years, family relationships stay relatively intact. It has been suggested that, whilst friends may provide voluntary support, family members may feel a greater sense of obligation to provide support (Kulari and Sarantakos Cordeiro, 2023). Therefore, Portuguese students’ prolonged reliance on family, both for accommodation and financial help is seen as a relief when faced with the struggle for economic independence and precarious job situation (Paiva, 2022). Under such circumstances, the present study raises awareness on the pivotal role of family assisting students into their transition to adulthood and adjustments to university context.

Finally, the relationship between social support from friends and family mediated the association of loneliness on depressive symptoms. Previous studies have confirmed that the relationship between friends and family as sources of social support was very significant during the transition to university (Grey et al., 2020; Surkalim et al., 2022). The present study found that the two variables had a chain mediating effect in the process of loneliness, affecting depressive symptoms. These results suggest that friends and family social support not only mediate the relationship between loneliness and depressive symptoms independently, but also affected depressive symptoms indirectly. In this case, friends’
social support is an important mediating variable of chain mediation. However, these findings do not necessarily mean that families are less important for the overall well-being during young adulthood. Rather, the current findings may reflect a changing relational focus during this developmental period, with the emphasis shifting from the family to the establishment of close friendships. Thus, our study provides further evidence to previous literature explaining the importance of social relationships during the adjustment to university years. To our knowledge, this is the first study to propose a model using both friends and family’s social support as a mediator in the relationships of loneliness and depressive symptoms amongst university students in Portugal.

Practical and theoretical implications
The present study contributed to the literature in several ways. First, it contributes to the general body of knowledge regarding loneliness, perceived social support and depressive symptoms amongst university students. There is scarce literature in Portugal exploring the mediating effect of friends and family as sources of social support. Hence, facing the global increase of loneliness as a public health concern, it is critical to understand factors that can buffer its effects amongst vulnerable populations, such as university students. From a practical perspective, the study provides insight to the crucial role of resources of social support for reducing levels of loneliness and depressive symptom during the transitions occurring in adulthood amongst university students. The current findings suggest that some of these concerns, and their links to additional psychosocial distress, can be mitigated by social support from friends and family, reaffirming the important role of friends’ support in emerging adults’ adjustment to university. University campuses can respond to this by creating opportunities that increase the likelihood of developing meaningful interpersonal connections amongst students. For example, implementing programmes such as university peer monitoring, social support group intervention or group intervention (Neto, 2021). Participation in extracurricular clubs and organisations may benefit some students, and there is recent evidence that social connections online can facilitate university students’ social adjustment (Grey et al., 2020). An additional notable point pertains to family support buffering feelings of loneliness. Thus, it is important for family members to remain connected and make their support available to their children as they transition to university life. Moreover, government and universities should invest in programmes that focus on building resilience and improving youth social skills in order to minimise loneliness and social exclusion. Policymakers should account for the negative effects of these issues amongst young adults and provide them with programmes that facilitate students’ reception of support from family and friends, such as travel options to visit home, or opportunities to become more involved within their community.

Limitation and future studies
Several limitations need to be noted when evaluating the findings of this study. First, data were all based on participant’s self-reports, which may have contributed to a greater association amongst the variables due to shared method variance. Second, the study design of the current research is cross-sectional, indicating that causality could not be established since the data only represent a given point in time. Hence, further longitudinal studies should be conducted to establish directionality in the relationships proposed in this model. Furthermore, friends and family social support were the only mediators of the study. Thus, other variables such as sex, number of friends, social isolation and emotional resilience should be examined in future studies as other mediators. Third, the study sample consisted of only university students, which cannot be generalised to young adults who do not attend
Despite the significant increase in the number of young adults attending university in recent years (Neto, 2021), it is unclear how these variables are related to the population who do not attend university. Subsequent research should include participants from this understudied population of non-higher education students and analyse differences amongst two groups of young adults. Finally, current data cannot assess the specific approach of social support. For example, in the present days, most university students establish relationships through online contacts. Therefore, future studies can help establish whether face to face support is more beneficial than its online counterpart.

References


**Corresponding author**

Genta Kulari can be contacted at: gkulari@autonoma.pt

For instructions on how to order reprints of this article, please visit our website: [www.emeraldgrouppublishing.com/licensing/reprints.htm](http://www.emeraldgrouppublishing.com/licensing/reprints.htm)

Or contact us for further details: permissions@emeraldinsight.com