

# Effect of Gratitude on Loneliness of Chinese International Students: Social Support as a Mediator

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## ABSTRACT

The purpose of this study is to investigate the unique contribution of gratitude and social support in predicting loneliness levels. Participants were required to answer questionnaires that tested their level of gratitude, loneliness, and social support, respectively. The statistical methods contained descriptive statistics, correlation analysis, and hierarchical regression analysis. A total of 384 people (153 male, 217 female, and 14 undisclosed) completed the measures of gratitude, loneliness, and social support. In line with theoretical assumptions, the results show that gratitude is indeed negatively correlated with loneliness and that social support acts as a partial mediator between the two. Indirect effect  $B = -0.59$ ,  $SE = 0.07$ , 95%CI [-0.74, -0.46],  $\beta = -0.27$ . Noteworthy, gratitude still remains a significant predictor of loneliness when controlling for social support,  $B = -0.38$ ,  $SE = 0.09$ , 95%CI [-0.55, -0.20],  $\beta = -0.17$ . These results could be explained by the lack of family support and friendship support for Chinese international students, and thus social support only acts as a partial mediator. Results of this study help researchers to gain better insights into the current loneliness situation for Chinese international students. Future studies could make greater progress in overcoming loneliness or even develop treatments for related illnesses for Chinese international students specifically.

**Keywords:** Gratitude, Loneliness, Social support, Chinese international students.

## 1. INTRODUCTION

We are living a world that is interconnected, but there is an unprecedented number of individuals still suffering from loneliness. Such issues are common in both Western and Eastern societies. In the United States, 43% of people always feel isolated from the others, and 46% of people report that they feel lonely [1]. In China, for example, one study on 64,000 participants shows that 90 percent of them feel lonely. Loneliness is a risky factor of premature mortality [2]; it is also positively correlated with suicide and parasuicide [3]. Therefore, many scholars have devoted themselves to studying loneliness for decades, seeking ways to mitigate the feeling of loneliness, especially for college students. This paper aims to analyze the current psychological well-being of a unique population, Chinese international students, and then explore the mechanism of how some positive emotional and social factors contributed to the ease of their loneliness level.

## 2. LITERATURE REVIEW

Among the various factors that are associated with the feeling of loneliness, gratitude and social support seem to attract attention from scholars. Gratitude is described as a "general tendency to recognize and respond with grateful emotion to the roles of others' benevolence in the positive experiences and outcomes that one obtains" [4]. Individuals accustomed to gratitude rarely face negative emotions, which guarantees health and well-being [5]. According to the Broaden-and-Build theory [6], gratitude, as one of the positive emotions, helps broaden cognitive schema, enhance activity, and build psychological resources. It eliminates the adverse impacts derived from negative emotions, one of which might be considered loneliness. In this regard, gratitude is a critical factor that prevents loneliness. For instance, Andrea highlighted that loneliness is negatively related to gratitude, yet positively correlated with life satisfaction and social desirability [7].

Social support is defined as "information leading the subject to believe that he is cared for and loved, esteemed, and a member of a network of mutual obligation" [8]. From the evolutionary psychology perspective, in ancient times, getting enough calories and staying safe and warm was nearly impossible for a single person, so being together and having supports from other group members was crucial for survival. Thus, human brain had developed this loneliness mechanism to alert ancient humans to form social bonds, such as giving out social supports as well as receiving supports from others [9]. Unsurprisingly, several studies in recent decades have indicated that social support is negatively correlated with loneliness [10], showing us that having social supports could remarkably reduce loneliness.

One demographic group that is of special interest is college students. According to Erikson's development stage theory [11], as a person enter adulthood, emotionally intimacy plays a critical role in a person's emotional well-being, and it was vital to gain social supports from other people, including family, friends, and the partner. Doing so requires a person to develop the ability to share himself/herself with others, as well as to listen and support others retrospectively.

Interestingly, there are studies showing that gratitude plays a vital role in helping a college student to gain social supports. Chen, Chen, and Tsai [12] found that students in college with a high level of gratitude perceived more social supports than those with a low level of gratitude. So, the question is whether there is a mechanism that links gratitude, loneliness, and social support altogether. To understand this, Ni et al. [13] tested the connection among Chinese college students. Their study has successfully proved that gratitude is negatively correlated with loneliness, and gratitude affects loneliness also indirectly through social support, showing us the mediating effect of social support. A similar result has echoed another study [14] conducted in China, illustrating that young adults who have a higher level of gratitude tend to feel socially supported, which contributes to enhanced life satisfaction.

Although these previous studies had successfully testified their hypotheses, there are still limitations. The biggest shortcoming is that those aforementioned studies only recruited their participants among domestic Chinese students. Therefore, it is questionable whether their findings could be applied to students who are outside of

those research contexts. To understand the well-being regarding loneliness among other student populations, we must conduct research on a wider variety of groups. One group that is easily left out from the discussion of psychological well-being is international students. However, they might experience emotional traumas and difficulties in similar ways.

In Australia for example, two-third of international students experience loneliness at least sometimes [15]. There are several ways to account for the finding, and cultural differences are one of the biggest factors. For example, one research mentioned that students who come from a conservative cultural background may find the Australian classroom chaotic in the first few months. Therefore, the students find it more difficult to fit in comparison to domestic students, which leads to less engagement during the class time [16].

Among all international students, Chinese international students always constitute the largest portion in the past few years. Just in the US alone, in 2018, there were around 1 million international students seeking a degree or enrolling in a training program, and 37% of them were all Chinese [17]. In this year alone, Chinese international students contribute 15 billion dollars to the American economy, out of the total of 44-billion-dollar international student business. However, at the same time Chinese international students face unique challenges that may aggravate their loneliness feelings. According to Jing [18], due to the background in which Chinese students grew up, they are not willing to ask for help from their friends and utilize on-campus therapy or other readily available resources when having psychological difficulties.

Therefore, considering the large number of Chinese international students, as well as the special challenges they are facings, we need to conduct more research on this particular group. In this case, to see if gratitude is still negatively correlated with loneliness, and whether social support is still having a mediating effect on Chinese international students, a similar study must be conducted on them independently. Such a study may extend the current theory and concept related to loneliness to a new group of people. Meanwhile, doing so may give us a better insight into the current loneliness level for Chinese international students, which could make greater progress in overcoming loneliness or even develop treatments

for related illnesses for Chinese international students specifically. Therefore, my hypotheses are as follows:

- Hypothesis 1: Gratitude is negatively related to loneliness among Chinese international students.
- Hypothesis 2: Social support is a mediator between gratitude and loneliness among Chinese international students.

### **3. METHOD**

#### **3.1 Participants**

The questionnaire was posted on online platform. Participants were asked to self-select for the study according to the criteria provided: (a) Are you above age 18; (b) Are you an international student. Although there were 400 respondents, 16 respondents were excluded because of their unusually short answering time duration. There were 384 participants selected for the study to achieve a 95% confidence interval according to the sample size calculation. Among the participants whose responses got accepted, 153 people are male, 217 people are female, and 14 people prefer not to disclose their gender. As for their education level, 257 people are undergraduate students, 157 people are graduate students, and 20 people are Ph.D. All participants receive 50 CNY as the compensation of completing the survey. In order to minimize the impact brought by the monetary incentive, rewards were given only after they have finished the study.

#### **3.2 Measurement**

For gratitude, this study used the Gratitude Questionnaire-6 (GQ-6). This questionnaire consists of 6 items. Each item is measured on a 7-point scale, with 1 being strongly disagree and 7 being strongly agree. One sample item is as follows: "I have so much in life to be thankful for." The Cronbach's alpha for internal reliability was 0.76.

For loneliness, this study adopted the third version of the Revised UCLA Loneliness Scale [19]. This scale consists of 20 items in total, and each one is rated on a 4-point scale ranging from never (0) to always (3). A sample item is as follows: "I do not feel alone." The Cronbach's alpha was 0.77.

For social support, this study used the shortened version of the Interpersonal Support Evaluation List

[20]. This Questionnaire includes 12 questions, and each one is rated on a 4-point scale, ranging from definitely false (1) to definitely true (4). One sample item reads: "If I were sick, I could easily find someone to help me with my daily chores." The Cronbach's alpha was 0.86.

#### **3.3 Study Design & Procedure**

Before answering the survey, each participant was provided with the information sheet and was asked to give consent to participate. All validated participants were voluntarily involved in the study. Once the participants agreed to take part, they began to answer three questionnaires that tested their gratitude level, loneliness level, and social support level, respectively. All participants had the right to quit the survey at any time, but those people's responses were not recorded. After answering all three questionnaires, participants were asked to provide some demographic information, including their gender, university location, and education level. Participants were allowed to stop and come back to answer at any time. The whole process is anonymous, and each participant was assigned a random software-generated code. All information is confidential and no identifying information is provided. There was no debriefing session after they finish their survey.

### **4. DATA ANALYSIS**

This study used Microsoft Excel version 16.64 as well as SPSS version 16.0 to analyze data. The statistical methods contained descriptive statistics, correlation analysis, and hierarchical regression analysis. The alpha level used was 0.05. For the Gratitude Questionnaire-6, items 3 and 6 were reverse scored. For Interpersonal Support Evaluation List shortened version, items 1, 2, 7, 8, 11, 12 were reversed scored.

To test the first hypothesis that gratitude is negatively related to loneliness among American college students, we ran a correlational analysis between gratitude (IV), loneliness (DV). Using Excel Tool-Pack functions, we analyzed whether social support (W) is a mediator between gratitude and loneliness among American college students. All scores were standardized before any computation regarding correlation and regression.

### **5. RESULTS**

The descriptive statistics and correlations between the gratitude, loneliness and social support

are shown in "Table 1". The results revealed that gratitude is significantly negatively correlated with loneliness,  $r = -0.45$ ,  $p < 0.05$ . Thereby, the first

hypothesis is supported that Chinese international students who experiences more gratitude emotions tend to experience less loneliness.

Table 1. Descriptive statistics and correlations of gratitude, loneliness and social support

|                    | Mean  | Std. Deviation | 1        | 2        | 3    |
|--------------------|-------|----------------|----------|----------|------|
| 1. Gratitude       | 29.61 | 5.56           | 1.00     |          |      |
| 2. Loneliness      | 25.63 | 12.18          | -0.45*** | 1.00     |      |
| 3. Social supports | 33.79 | 6.85           | 0.46***  | -0.68*** | 1.00 |

a Note: Valid N (listwise) = 384; \*\*\* Correlation is significant at the 0.05 level (2-tailed).

The regression was conducted to test the mediation effect of hypothesis 2 whether social support is a mediator between gratitude and loneliness among Chinese international students. The result and relationships are shown in figure 1. Results indicated that gratitude is a significant predictor of social support,  $B = 0.56$ ,  $SE = 0.06$ ,  $95\%CI [0.45, 0.66]$ ,  $\beta = 0.46$ ,  $p < 0.001$ . Social support is a significant predictor of loneliness,  $B = -1.07$ ,  $SE = 0.07$ ,  $95\%CI [-1.21, -0.92]$ ,  $\beta = -0.60$ ,  $p < 0.001$ . Gratitude remains a significant predictor of loneliness after controlling for the mediator, social support,  $B = -0.38$ ,  $SE = 0.09$ ,  $95\%CI [-0.55, -$

$0.20]$ ,  $\beta = -0.17$ ,  $p < 0.001$ , consistent with partial mediation. Approximately 48% of the variance in loneliness was accounted for by the predictors ( $R^2 = 0.48$ ). The indirect effect was tested using a percentile bootstrap estimation approach with 5000 samples [21], implemented with the PROCESS macro [22]. These results indicated the indirect coefficient is significant,  $B = -0.59$ ,  $SE = 0.07$ ,  $95\%CI [-0.74, -0.46]$ ,  $\beta = -0.27$ . Therefore, the hypothesis 2 is partially supported that the effects of gratitude on loneliness is partially explain by social supports, while gratitude still explain its own effect on loneliness.

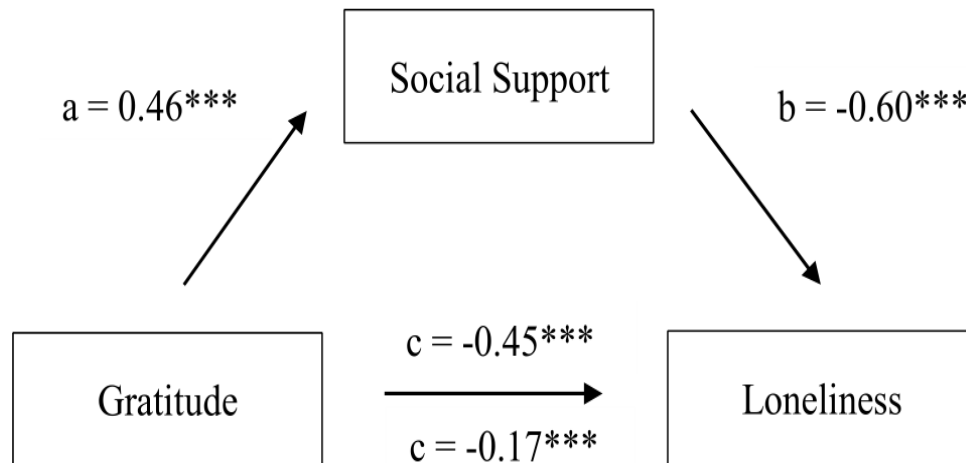


Figure 1 The relationship among gratitude, loneliness and social support.

a Note: a, b, c and c' are path  $\beta$  representing unstandardized regression weights and standard errors (in parentheses). The c path  $\beta$  represents the total effect of Gratitude on the Loneliness. The c-prime path  $\beta$  refers to the direct effect of the gratitude on the loneliness. All paths are significant. \*\*\* $p < 0.001$ .

## 6. DISCUSSION

The data has supported hypothesis one, showing that gratitude is negatively correlated with loneliness. As stated by the Broaden-and-Build theory, individuals tend to have broader cognitive schema and more psychological resources when they experience more positive emotions like gratitude. Loneliness, as one of the negative emotions, should be effectively reduced by

experiencing more gratitude because the adverse impact of loneliness could be eliminated by having more positive emotions. Such beneficial effects associated with gratitude have been found across populations, including Chinese domestic college students as well as European citizens [23].

For hypothesis two, however, social support has only partial mediating effect on gratitude and loneliness, which is different from what Ni et al. found in their experiment. One possible explanation

is that the Chinese international students in this study actually receive significantly less social support. As a result, the power of social support influencing students' gratitude and loneliness emotions has been limited, although it still has some impact. According to Taylor [24], social support is derived from multiple sources, such as family, friendship, romantic partners, and pets and so on. In terms of family support, Chinese students who study domestically could easily seek helps from their families when encountering difficulties. Their parents could physically come around and take care of them in hours. Moreover, the parents could provide the most accurate advises and useful helps based on their decades of experience living in the Chinese culture.

However, the situation is drastically different for Chinese international students. It is difficult for them to receive supports from their family. Most of the time they have to deal with obstacles by themselves, because it is impractical for their parents to come physically. Although they might be able to communicate with their parents via internet, their parents may not answer them promptly due to time zone differences. Even when they finally get in touch with their parents, their parents might not be able to provide useful advice due to cultural differences and language barriers.

Friendship is another vital source of social support, but Chinese international students may not receive enough friendship supports either. It is difficult for Chinese international students to establish deep friendships in the first place due to heterophily of values. Value homophily, in fact, provides the only critical ground for forming a strong and lasting friendship [25]. For Chinese domestic students, finding people with shared values is easy since they all grew up in similar environments. For Chinese international students, however, finding people with shared values suddenly becomes an extravagant request due to cultural differences. As a result, Chinese international students usually mingle within the Chinese community only and find it hard to make foreign friends [26].

In the United States, one study [27] has found that international students in general are less likely to establish friendships with locals compared with domestic US students. 40 percent of the participants claim that they have no strong American friendships. Even if they have American friends, most of them still hope that their friendship could be tighter and more meaningful. The situation is

even worse for Chinese or other East-Asia students, as the same study shows that they experience less friendship and greater dissatisfaction compared to other international students.

This ongoing Covid-19 pandemic is a great example that exposes Chinese international students' urgent need for family and friendship support. Chen's survey [28] last year reports that a number of Chinese international students expressed their homesickness toward their family and friends in China. As some of them stated, if they were in China at that moment, having their family and friends' support and accompany would make their time much easier, both materially and emotionally.

## **7. LIMITATION**

One limitation of this study is that the outcomes were measured by self-report. Self-report data is notoriously unreliable, as there can be problems with memory bias and recall [29]. Therefore, a longitudinal study in the future is recommended to minimize personal bias. Moreover, it was hard to distinguish who was answering questions thoughtfully and who was just randomly selecting answers. Although questionable answers have been removed already (for example, the answers will be automatically deleted if the time the person spent answering questions is less than 2 mins), it is still hard to ensure that every response accurately reflects the participant's true belief and experience.

## **8. CONCLUSION**

Previous studies have already studied the relationship among gratitude, loneliness and social support on a few population groups. However, international students, who also suffer from the feeling of loneliness greatly, were largely left out of the discussion. Among all international students, Chinese international students stand out due to their unique experiences and cultural background. Therefore, they deserve to be studied independently as a new group of population. This present study intends to test two hypotheses. First, gratitude is negatively related to loneliness among Chinese international students. Second, social support is a mediator between gratitude and loneliness among Chinese international students.

Based on the experiment data, hypothesis one has been testified, which is in line with experiments that were operated on other populations. However, for hypothesis two, the data show that social support is only playing a partial mediating effect

between gratitude and loneliness. The results could be explained by the fact that Chinese international students receive limited social support due to the lack of family support and friendship support. In the end, a future longitudinal experiment is recommended since it will provide us with more accurate survey results.

## **AUTHORS' CONTRIBUTIONS**

Fenghua Yu was mainly responsible for designing experiments, collecting data, analyzing data and writing papers. Fei Yuan participated in the analysis of the data and completed the revision of the paper.

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