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Spring 2021

### 2nd Place Contest Entry: Loneliness as a Predictor of Physical and Mental Health Problems in University Students

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#### Recommended Citation

Binstock, Jolie, "2nd Place Contest Entry: Loneliness as a Predictor of Physical and Mental Health Problems in University Students" (2021). *Kevin and Tam Ross Undergraduate Research Prize*. 29. <https://digitalcommons.chapman.edu/undergraduateresearchprize/29>

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## The Kevin and Tam Ross Leatherby Libraries Undergraduate Research Prize

Leatherby Libraries was paramount to my ability to conduct research during the COVID-19 pandemic. The closing of Chapman's campus resources prevented me from accessing physical texts, and complicated communication with my advisor, Dr. Julia Boehm. Fortunately, I was able to utilize the library's online database. The helpful and user-friendly system allowed me to access a broad variety of journal articles, research studies, and meta-analyses. I manipulated searches to meet my needs by filtering the date published, the article type, or whether it was peer-reviewed. The PsycINFO database was particularly useful for discovering current studies examining psychological impacts of COVID-19.

I began with a broad search to gain a general understanding of loneliness, mental health, physical health, and their relationship. I concentrated on keywords to pinpoint connections with my topic of loneliness as a predictor of physical and mental health during the COVID-19 pandemic. Separating search terms generated a wider variety of literature—I searched “loneliness and mental health” separately from “loneliness and physical health” to retrieve a diverse spread of studies. Varying the search terms also provided access to a wider breadth of literature. Substituting the term “mental health” with “depression” offered more specific studies that I could use to complement my research. Though I focused on university-aged students, I examined articles that studied all different age groups—including children and elderly individuals—to understand different methods and findings determined for similar topics. Examining reference lists of relevant articles was especially useful for finding new ways to phrase search terms and accessing similar articles that might apply to my project. Studies with goals to assess loneliness and health would likely cite trustworthy articles with related information which I could utilize when supporting the claim of my project.

The TRAAP criteria of timeliness, relevance, authority, accuracy, and purpose were fundamental to my project because of the novelty of the COVID-19 pandemic. Minimal research examined the social, psychological, or physical effects of the pandemic. Consideration of timeliness was crucial when selecting articles, as outdated papers would be less effective for

supporting my claim. While effects of loneliness during the pandemic were unknown, existing research explained how loneliness predicted mental and physical health in other circumstances. Because of the evolving nature of technology and its effect on social interaction, selection of current articles was essential to ensure that supporting evidence for my hypothesis accounted for such factors. Older articles lack consideration of how social media or cell phones might influence loneliness. To assess relevance and accuracy of the literature, I examined sample sizes, methods, and limitations of the study to make a conclusion regarding perceived legitimacy. I searched for studies conducted during the COVID-19 pandemic, even if unrelated to my topic, to gain pertinent information and develop knowledge about how other researchers were approaching the topic. Focusing on studies of loneliness as a predictor of physical and mental health outcomes rather than studies that included other variables allowed me to ensure that the literature that I used to support my study contained applicable information.

Due to limited in-person resources as a result of the COVID-19 pandemic, I expected to face difficulty obtaining adequate support for my project. When unable to access the physical library, the “LibChat” virtual chat feature proved invaluable. Using the chat feature, I communicated with a librarian who assisted me with the interlibrary loan feature so that I could access articles that would fortify my project. Students are not always granted access to all studies, so the interlibrary loan feature was helpful for obtaining a broad array of high-quality articles. Leatherby Libraries’ virtual chat feature allowed for seamless communication with librarians who were greatly accommodating and improved the difficult process of acquiring literature.

Throughout my project, I strengthened my ability to acquire, assess, and apply literature to support my claim. I became familiar with the process of varying search terms to access a variety of articles and scanning them by examining abstract and discussion sections to determine if the article will be applicable to my study. I learned to categorize acquired literature in a spreadsheet for easy reference when composing my paper. Using references of useful papers expanded the breadth of literature that could be used to strengthen my study. I utilized the “LibChat” virtual communication to contact

librarians and familiarize myself with the interlibrary loan process to further increase the literature I could access. These skills allowed me to conduct timely research regarding the negative effects of loneliness during the COVID-19 pandemic. This is an indispensable area of research, as a substantial number of people were negatively influenced by the pandemic, and the effects could persist far into the future. While my research is not yet complete, the tools and support provided by the Leatherby Libraries will continue to prove invaluable to further knowledge in this important area.

**Loneliness as a Predictor of Physical and Mental Health Problems in University Students**

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Chapman University

May 3, 2021

# **Loneliness as a Predictor of Physical and Mental Health Problems in University Students**

## **Introduction**

In March of 2020, the COVID-19 pandemic erupted in the United States. Dorm-living, study groups, and university-hosted social events halted abruptly, creating an environment of isolation for university students whose lives are typically filled with socialization. Previous research suggests that loneliness predicts decreased mental health in older adults (Losada et al., 2012). A study of older adults ( $M = 84.53$ ,  $SD = 8.61$ ) suggested that loneliness was associated with an increased risk of “all-cause mortality” in those who live alone (O'Súilleabháin, 2019). Limited research examines the association between loneliness and mental and physical health in university students. Such research is particularly relevant given the current global pandemic as the typical lives of university students have changed drastically due to dorm occupancy restrictions and the shift to online learning, increasing the amount of isolation beyond the initial quarantine. We hypothesized that higher instances of self-reported loneliness will correlate with worse mental health symptoms. Specifically, people with higher levels of loneliness are expected to display more symptoms of anxiety and depression than people with lower levels of loneliness. Additionally, we hypothesized that higher instances of self-reported loneliness will correlate with worse physical health symptoms. Specifically, loneliness is related to more physical symptoms of ill health, as well as worse general health.

## **Methods**

### ***Participants***

An online survey was distributed to undergraduate and graduate students at Chapman University. Students self-reported information regarding health, psychosocial factors, academic experiences, housing situations, and financial situations. The survey took place from May 15<sup>th</sup>, 2020 until the end of May during the COVID-19 pandemic. 292 students completed the survey—242 women and 50 men. The sample included 4 African American/Black students, 1 American Indian or Alaskan Native student, 119 Asian American/Asian students, 12 Hispanic/Latino students, 2 Native Hawaiian or Pacific Islander students, 14 Middle Eastern, Arab, or Arab American Students, 114 White students, 17 students who

reported “Other,” and 9 students who preferred not to disclose. Of the 292 students, 187 were undergraduate students, and 105 were graduate students. The mean age of the students was 21.4 ( $SD = 3.06$ , minimum = 18, maximum = 42).

### *Measures*

This study focuses on survey questions from five scales. The Three-Item Loneliness Scale assessed loneliness using three questions that were evaluated on a scale of 1 to 3, with a response of “1” indicating “hardly ever,” “2” indicating some of the time, and “3” indicating often (Hughes et al., 2004). Internal consistency for loneliness was acceptable ( $\alpha = 0.768$ ). The Generalized Anxiety Disorder 7-item scale (GAD-7) assessed anxiety using seven questions describing symptoms of anxiety that were evaluated on a scale of 0 to 3, with reported score of “0” indicating “not at all” and a score of “3” indicating “nearly every day” (Spitzer et al., 2006). Internal consistency for the GAD-7 scale was excellent ( $\alpha = 0.924$ ). The Center for Epidemiologic Studies Depression Scale (CES-D) assessed depression using ten questions describing symptoms of depression that were evaluated on a scale of 0 to 3, with a reported score of “0” indicating “rarely or none of the time” and “3” indicating “all of the time” (Radloff, 1977). Internal consistency for the CES-D scale was good ( $\alpha = 0.848$ ). The Cohen-Hoberman Inventory of Physical Symptoms (CHIPS) assessed physical health symptoms using 33 questions that were broken down into subscales including sympathetic/cardiac symptoms, muscular pain, metabolic symptoms, gastro-intestinal symptoms, vasovagal symptoms, cold/flu symptoms, headache symptoms, and minor hemorrhagic symptoms. The questions were evaluated on a scale of 0 to 4, with a reported score of “0” indicating “not been bothered” and a score of “4” indicating “extreme bother” (Allen et al., 2017). Internal consistency for the CHIPS scale was excellent ( $\alpha = 0.939$ ). A single item from the 12-Item Short Form Health Survey (SF-12) was included to assess overall health. The question was evaluated on a scale of 1 to 5, with a reported score of “1” indicating “excellent” and a score of “5” indicating “poor” (Ware Jr. et al., 1996). Simple linear regression tests were conducted to examine where a relationship exists between loneliness and physical and mental health with loneliness as the predictor and various mental and physical health symptoms as the outcome.

## Results

<b>Loneliness as a Predictor of Mental Health Symptoms</b>			
	<b>Regression Coefficient (<i>b</i>)</b>	<b>Confidence Interval</b>	<b><i>p</i>-value</b>
<b>Anxiety</b>	2.29	[1.65, 2.93]	<0.001
<b>Depression</b>	3.17	[2.59, 3.75]	<0.001

<b>Loneliness as a Predictor of Physical Health Symptoms</b>			
	<b>Regression Coefficient (<i>b</i>)</b>	<b>Confidence Interval</b>	<b><i>p</i>-value</b>
<b>Overall Health</b>	0.300	[0.200, 0.401]	<0.001
<b>Sympathetic/Cardiac Symptoms</b>	2.00	[1.09, 2.91]	<0.001
<b>Muscular Pain Symptoms</b>	1.20	[0.693, 1.72]	<0.001
<b>Metabolic Symptoms</b>	2.07	[1.54, 2.59]	<0.001
<b>Gastro-intestinal Symptoms</b>	0.756	[0.308, 1.20]	0.001
<b>Vasovagal Symptoms</b>	0.945	[0.565, 1.32]	<0.001
<b>Cold/Flu Symptoms</b>	0.359	[0.184, 0.534]	<0.001
<b>Headache Symptoms</b>	1.000	[0.649, 1.35]	<0.001
<b>Minor Hemorrhagic Symptoms</b>	0.275	[0.0871, 0.462]	0.004

## Discussion

The results demonstrate a statistically significant association between higher levels of loneliness and more mental and physical health symptoms. This data used in this study is cross-sectional, which presents a limitation because the order in which loneliness and physical and mental health symptoms influence each other cannot be determined. This study utilized data from the first wave of a longitudinal study. Future research could evaluate whether self-reported loneliness scores changed as the COVID-19 pandemic continued and how this may impact mental and physical health symptoms over time.



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