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## COVID-INDUCED STRESS AND SYMPTOMS OF ANXIETY AND DEPRESSION IN UNDERGRADUATE STUDENTS

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COVID-INDUCED STRESS AND SYMPTOMS OF  
ANXIETY AND DEPRESSION IN UNDERGRADUATE STUDENTS

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A Project  
Presented to the  
Faculty of  
California State University,  
San Bernardino

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In Partial Fulfillment  
of the Requirements for the Degree  
Master of Social Work

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by  
Christina Ngo  
Quenea Popoca  
May 2023

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## ABSTRACT

The COVID-19 pandemic has had ramifications on the mental health of numerous vulnerable individuals. The aim of this study was to determine whether there is a relationship between COVID-19 induced stress and symptoms of anxiety and depression among undergraduate students. Embracing a quantitative design, this study surveyed 93 undergraduate students in major public universities in the western part of the United States (N = 93). Results from the nonparametric Mann-Whitney U Test revealed that there is no statistically significant relationship between COVID-19 induced stress and symptoms of anxiety and depression in undergraduate students (U = 734.500,  $p = .066$  for anxiety and U = 888.50,  $p = .122$  for depression). The implications of these findings for social work practice are discussed.

*Keywords:* COVID-19, induced, stress, anxiety, depression, undergraduate students, mental health

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# CHAPTER ONE

## PROBLEM FORMULATION

### Introduction

Stress is defined as a non-specific response to stressful stimuli experienced by the body (Fink, 2016). There are two types of stress. Pleasant forms of stress are eustress, and unpleasant forms of stress are distress. For this paper, we will utilize the term stress to describe distress. The American Psychological Association (APA) (2013) defines anxiety as an emotion characterized by feelings of tension, worried thoughts, and physical changes. Physical symptoms of anxiety include sweating, rapid heartbeat, trembling, and dizziness (APA, 2013). Depression is defined as a medical illness that causes feelings of sadness, worthlessness, hopelessness, guilt, thoughts of death or suicide, and the loss of interest in activities once enjoyed (APA, 2013).

In general, undergraduate students are prone to experiencing mental health challenges (Lee et al., 2021). It is therefore essential to reveal and study the increased stress and anxiety levels experienced by this population during the pandemic. According to Lee et al. (2021), about 88% of students experienced moderate to severe stress, with 44% showing moderate to severe anxiety in the early phase of the pandemic. Additionally, 71% of students surveyed reported increased stress and anxiety due to the pandemic alone (Son et al., 2020).

Social work practice focuses on enhancing the well-being of vulnerable individuals and serves to provide care to those in need. The COVID-19 pandemic

has created significant social, mental, and economic hardships on undergraduate students. Cooper and Briggs (2014) argued that social workers play vital roles in disaster recovery. However, their professional education does not adequately prepare them for specific disaster management roles and activities. The National Association of Social Workers (NASW) (2017) upholds the value of social justice. This value challenges social workers to pursue social change on behalf of vulnerable and oppressed populations such as college students for example (NASW). Social workers must strive to provide appropriate access to services, resources, and information for their clients. Studying the mental health effects of the COVID-19 pandemic is essential and can better equip social workers to offer mental health services in the future.

The college years represent a time of vulnerability, making college students more likely to experience stress or anxiety sometime in their college education. The COVID-19 pandemic and the policies implemented have contributed to the cause and increased stress and anxiety levels among these college students. During the COVID-19 pandemic, the U.S. government executed policies to protect the country and minimize the number of cases and deaths. Countries around the globe introduced several types of lockdown policies restricting their populations' movements to reduce the spread of the virus, minimizing the morbidity and mortality rates related to the COVID-19 pandemic (Bonardi et al., 2020). While the lockdown policies were beneficial and cases were decreasing, research reported increased mental health challenges during

the lockdown due to social isolation (Bonardi et al., 2020). Another policy that had consequences on the mental health of many individuals, especially college students, was the transition to online learning. According to Prowse et al. (2021), with the quick closures of universities, students encountered concern about their academic future, social isolation, and lack of support, leading to elevated levels of stress, anxiety, and depression. Another study found anxiety and depression levels elevated during mid-March when students were asked to leave the campus due to the pandemic (Lee et al., 2021). These policies had unintended consequences for many individuals, especially college students.

#### Micro Interventions for Addressing Anxiety and Depression

In the context of the COVID-19 pandemic, it is clear that tremendous stress has been imposed on college students as well as the college's capacity to provide mental resources and support to students. There are many ways college students have coped with stress caused by the pandemic. Unhealthy coping mechanisms may include oversleeping, drinking alcohol, misusing drugs, ignoring media outlets sharing news about COVID-19, and more. Healthy coping mechanisms may include seeking professional mental health providers, practicing stress-management strategies, working out, practicing religious rituals, engaging in arts and crafts, joining social support groups, and more.

Research has found that stress management interventions have moderate effects on reducing students' anxiety and stress levels (Benjet, 2020). Stress management interventions can be offered through counseling or therapy

services. These interventions are extremely useful right now due to the overwhelming need to address and manage college students' stress.

Unfortunately, despite the increase in demands, not many college students are seeking treatment or engaging in mental health resources provided by college campuses.

A couple of reasons why researchers believe not enough students are seeking mental health services are due to self-sufficiency and embarrassment (Benjet, 2020). In addition, the COVID-19 pandemic has moved almost all college students off-campus and into virtual classes. As a result, online mental health services such as virtual counseling and therapy might be the best way to address the treatment gap and serve college students' mental health needs (Benjet, 2020).

Another example of how students cope is by seeking support from others. An individual's quality of social support is seen as a protective factor for how well to manage adverse mental health effects (Mai et al., 2021). Social support is helpful for students to cope with or recover from traumatic situations and improve a person's mental state (Mai et al., 2021). Peer support plays a critical role in building resilience in college-aged students who share similar struggles and experiences, creating a mutual understanding. When a student is experiencing anxiety or depression, these social support systems can offer emotional, physical, informational, or material support.

### Significance of Research Study

The findings from this research project will provide a greater understanding of the mental health needs of college students during the COVID-19 pandemic. Social work practitioners have an ethical obligation to serve vulnerable populations and play a vital role in identifying, assessing, intervening, and treating mental health concerns. However, social workers are not exceptionally trained in providing support during disasters such as COVID-19 (Cooper & Briggers, 2014). With higher reports of anxiety and depression in college students during the COVID-19 pandemic, there is an urgent demand for professional mental health services carried out by social workers. Gaining a greater understanding of how the COVID-19 pandemic has affected students will be helpful in the development and implementation of effective services to support college students' needs in the future.

With the presence of a global pandemic taking place, a wide variety of mental health concerns have come to surface. Undergraduate students across Southern California have undergone tremendous mental stress during their academic school year. Dramatic changes include transitioning to virtual learning, missing out on major events, being under lockdowns, and social distancing. It is crucial to understand how this global pandemic has affected students' mental well-being to understand what should be done in the future if another disaster occurs. With that being said, the research question for this study is as follows: Is

there a relationship between COVID-19-induced stress and symptoms of anxiety and depression in undergraduate students in Southern California?

## CHAPTER TWO

### LITERATURE REVIEW

#### COVID-Induced Stress

College students are at risk of experiencing stress throughout their education. Son et al. (2020) utilized interview surveys to assess the mental health effects of the COVID-19 pandemic on undergraduate college students. Son et al. (2020) identified new stressors created by the COVID-19 pandemic including fear and worry for loved ones or oneself, social isolation, social activities due to quarantine, and sudden and radical lifestyle changes. Overall, 91% of respondents indicated that the virus increased their level of fear about their health and the health of their loved ones (Son et al., 2020). About 15% of respondents expressed worry about their loved ones working essential jobs, such as healthcare workers, who are at an increased risk of exposure to the virus.

During the beginning stages of the COVID-19 pandemic, many policies were implemented to protect individuals from being infected. Some of these COVID-19 policies included lockdowns, social isolation or quarantine, and virtual learning. These policies were aimed to reduce the number of positive COVID-19 cases and rates of mortality. Although these policies were adopted to reduce mortality rates, there was an increase in individuals experiencing stress at home.

Almost 90% of respondents indicated they had more difficulty concentrating on homework due to distractions (Son et al., 2020). Distractions were more common for college students during the pandemic because of stay-at-

home orders and many public study areas being closed. For many, it was difficult to find a quiet place to focus. Some respondents mentioned that focusing on academic work at home is challenging because their house is more of a place to relax rather than a place to study (Son et al., 2020).

As demonstrated above, the sudden and unexpected transition to virtual learning and the closure of universities led to many college students suffering and experiencing increased levels of stress, anxiety, and depression. A study examining the impact of social isolation among college students found that 37.7% of its participants reported that the transition to online learning was difficult, and 30.6% reported that the shift negatively impacted their well-being (Prowse et al., 2021).

Financial stability became a major concern during the beginning stages of the pandemic because many businesses were closing temporarily or letting go of many employees. More than half of respondents indicated stressful financial concerns due to the pandemic (Son et al., 2020). In addition, many undergraduate students who rely on their parents for financial support were affected when their parents or other household income earners were laid off or received reduced wages. According to the Statista Research Department (2021), the unemployment rate for college aged students before the pandemic in 2019 was only 8.4%. In contrast, the unemployment rate for college aged students in 2020 increased to 14.9% (Statista Research Department, 2021). This strongly suggests that the COVID-19 pandemic created immense job loss and



unemployment across all age groups, especially college-aged students, as indicated by the significant increase of unemployment rates between 2019 and 2020.

Additional studies identified that many individuals suffered from sudden job changes and social policies, especially college students (Bonardi et al., 2020; Prowse et al., 2021). The closure of universities and the transition of virtual learning added more stressors to the college population. Other stressors identified include concerns about their academic future, social isolation, financial stability, and lack of support for college students. Following the sudden change of virtual learning and the closure of universities, students began to suffer and experience those increased levels of stress, anxiety, and depression. A study examining the impact of social isolation among college students found that 37.7% of its participants reported that the transition to online learning was difficult, and 30.6% reported that the shift negatively impacted their well-being (Prowse et al., 2021).

### Anxiety and Depression

Anxiety and depression are the most common mental health problems among the college population (Beiter et al., 2015). A study found that college students who reported to be “highly anxious,” “depressed” and “stressed,” were mostly transfer students, upper class students, and students living off-campus (Beiter et al., 2015). These studies have identified the different indicators of

stress among college students, particularly undergraduate students that have reported experiencing the most stress, anxiety, and depression.

These studies demonstrate that most college students experience moderate stress levels and mental health concerns, including anxiety and depression. A study conducted by Gao et al. (2020) reported that over 45% of female students and 40% of male students reported experiencing anxiety alone in their first year of college. Yet, there was no significant gender difference in students' depression and stress levels (Gao et al., 2020). Although both male and female students suffer from stress, anxiety, and depression throughout their college education, findings illustrate a disparity in anxiety levels among female and male students.

Moreover, the COVID-19 pandemic research suggested that the levels of anxiety and depression have increased significantly in the early phases of the pandemic. Huckins et al. (2020) claimed that an increase in self-reports of symptoms of anxiety and depression were made by college students one week after the first case of COVID-19 was confirmed at Dartmouth College, and within the same time, students were forced to leave campus and transition to virtual learning. The findings from this study identified that college students are vulnerable to experiencing mental health challenges.

Out of the 195 respondents, 16 reported having suicidal ideation incited by the pandemic (Son et al., 2020). About 6 out of the 16 respondents attributed their suicidal ideations to depression (Son et al., 2020). At the same time, other

reasons were linked to decreases in academic performances, conflicts with family members as they moved back home, and fear of uncertainty (Son et al., 2020). Out of the 195 respondents, 86 respondents reported experiencing depressive thoughts during the COVID-19 pandemic, and their major contributing factors included social isolation, loneliness, uncertainty, hopelessness, powerlessness, academics, and overthinking.

### Limitations of Past Research

The studies utilized for this research had some limitations that influenced the findings in the studies. Approximately two studies primarily focus on the initial days of the COVID-19 pandemic, limiting their study to the initial phase of the pandemic. The two studies identified these limitations because the responses were answered during the initial phase of the COVID-19 pandemic and suggested there could have been a dramatic shift during the initial and later stages. Additionally, the studies mention the importance of considering the change from in-person to online coursework and the academic term the students were in (Huckins et al., 2020; Prowse et al., 2021).

Gao et al. (2020) reported the limitations of their study, including limiting their studied population to first-year undergraduate students. The limitations for the population suggested a limit to the generalization of the findings, which as a result could not be applied to all undergraduate students due to surveys being filled out only by first-year students (Gao et al., 2020). These studies failed to include graduate and undergraduate students in their research, making their

generalizability much more accurate. However, focusing on only undergraduate students has benefits like greater accessibility and a larger sample size.

Another limitation of the existing literature is that most studies were conducted during the pandemic's initial stages. During this time, not much was known about COVID yet, which could affect the interpretation of their data. This proposed research will be different by gathering post-COVID data and focusing on Southern California. As of February 2022, the world entered the 3rd year of the pandemic. This will be a much different phase of the pandemic compared to Huckins et al. (2020) and other studies as restrictions and regulations begin to change, college classes return to in-person instruction, and new variants begin to develop. Social distancing is no longer as strict and social isolation has steadily decreased over the years. Undergraduate college students' lifestyles will continue to adjust to the new "normal." Their mental well-being will either be impacted negatively, positively, or stay the same. These findings will be reflected in this proposed study and contribute to a greater understanding of this research area.

#### Theories Guiding Conceptualization

The theoretical perspective used to conceptualize this research project is Person-In-Environment (PIE) theory. The framework explains how the environment has a powerful impact on the life experiences of individuals (Green & McDermott, 2010). According to Green and McDermott (2010), Person-In-Environment (PIE) begins from a position that recognizes the interdependence of

phenomena in affecting, changing, and sustaining human life. The theory will help conceptualize the cause of stress and other contributing mental health challenges due to the environment that these individuals are placed in. It is essential to view stress as an integrated part of the mind and body and understand its physiological and psychological effects (Everly & Lating, 2002).

The theory will help frame the process of COVID-19 induced stress and its symptoms of anxiety and depression by understanding the nature of stress and its impact on the population's lives being studied. The approach focuses on and guides social workers to intervene effectively. The theory is valuable based on its multi-system, eclectic mindset that allows social work educators to build curricula within the broad context of all pertinent social systems (Greene, 1999).

## CHAPTER THREE

### METHODOLOGY

#### Introduction

This chapter will outline the study's plan to analyze the relationship between COVID-induced stress and symptoms of anxiety and depression in undergraduate students. This chapter breaks the plan into six parts: the study design, sampling, data collection and instruments, procedures, protection of human subjects, and data analysis.

#### Study Design

This study aims to analyze the relationship between two variables: COVID-induced stress and symptoms of anxiety and depression among undergraduate students. This is a quantitative, cross-sectional research in nature. The quantitative research approach is important in generating quantifiable estimates. Another advantage of using a quantitative, cross-sectional design is that this approach will allow our study to reach a much larger population. In addition, a cross-sectional study allows for more respondents, as individuals would feel more at ease answering from the comfort of their own homes. It is also vital to point out that this cross-sectional study is inexpensive and easy to conduct.

Three limitations of using a cross-sectional study are the low response rates from a large population, sampling bias, and inability to measure causality.

In selecting a large sample size, the cross-sectional study is susceptible to sampling bias due to the possibility of low response rates. Additionally, the cross-sectional study would not be able to make a causality between the COVID-19 pandemic and whether it caused more stress among undergraduate students.

### Sampling

This study used a nonprobability sampling method to recruit participants. The researchers used a survey to reach undergraduate students in large public universities in Southern California. For this study, the researchers targeted 200 undergraduate students but ended up with a sample of 93 participants. Individuals who wished to participate but were not currently enrolled in undergraduate college courses were excluded from the study. All participants were 18 years or older.

### Data Collection and Instruments

There were two instruments involved in this study: the Generalized Anxiety Disorder (GAD-7) and the Patient Health Questionnaire (PHQ-9). The GAD-7 was created by Dr. Robert L. Spitzer to measure generalized anxiety and is widely recognized as a valuable and reliable tool for screening symptoms of anxiety. The Generalized Anxiety Disorder (GAD-7) scale consists of 7 items related to the experience of anxiety symptoms. Participants will be prompted to rate on a 4-point Likert scale how often they have been bothered by the following issues within the

past 2 weeks. After reading each statement, participants rated how often the corresponding issue affected them within the past 2 weeks.

Response options for the GAD-7 include “not at all”, “several days”, “more than half the days”, and “nearly every day”. Each level of frequency has an assigned score. For example, “not at all” has a score of 0, “several days” has a score of 1, “more than half the days” has a score of 2, and “nearly every day” has a score of 3. Individual participant’s scores will be added up to determine the level of severity in symptoms of anxiety. The total score for the GAD-7 ranges from 0-21. According to the Generalized Anxiety Disorder scale, a total score of 0–4 is considered minimal anxiety, 5–9 is considered mild anxiety, 10–14 is considered moderate anxiety, and 15–21 is considered severe anxiety.

The PHQ-9 was designed by Dr. Spitzer, Dr. Williams, and Dr. Kroenke. The PHQ-9 consists of 9 items scoring each of the 9 DSM-5 criteria for depressive disorders. The PHQ-9 is remarkably similar to the Generalized Anxiety Disorder scale (GAD-7) because participants will be prompted to read each of the 9 statements then rate on a 4-point Likert scale how often they have been bothered by each issue over the last 2 weeks. Response options for the PHQ-9 include “not at all”, “several days”, “more than half the days”, and “nearly every day”.

Like the Generalized Anxiety Disorder scale, the PHQ-9 assigns a score to each frequency level. The response option “not at all” has a score of 0, “several days” has a score of 1, “more than half the days” has a score of 2, and



“nearly everyday” has a score of 3. The total score for the PHQ-9 ranges from 0-27 indicating the severity of depressive symptoms. According to the PHQ-9, a total score of 0-4 is considered none, 5-9 is mild, 10-14 is moderate, 15-19 is moderately severe, and 20-27 is severe.

COVID-induced stress was measured using a 5-item questionnaire created by the researchers of this study. The Covid-induced stress questionnaire was modeled after the Generalized Anxiety Disorder (GAD-7) scale and Patient Health Questionnaire (PHQ-9) by having a similar format and process where participants will be instructed to read 5 questions related to stress induced by the COVID-19 pandemic, then rate on a 4-point Likert scale the frequency of their experience with each stressor within the past 2 weeks. Each response option was assigned a score ranging from 0 “not at all” to 4 “nearly every day”.

### Procedures

The researchers of this study contacted their former undergraduate professors and advisors via email and requested that each professor distribute a web link of the online survey to their undergraduate students. Participants’ responses were collected through Qualtrics and stored on a secure Google drive which is linked to CSUSB. The survey began with an informed consent form to explain the purpose of this study, a brief description of what is required to complete the survey, and a request for the reader’s voluntary participation.

Each participant was required to review and complete the informed consent form before moving on to the online survey questions. In order to

complete the informed consent form, participants were prompted to electronically “check” a box below the statement: “By checking the box below, I understand that I must be 18 years of age or older to participate in your study, have read and understood the informed consent document, and agree to participate in this study.”. By electronically checking the box, participants indicate their agreement to participate in the survey. Those who declined to participate may leave the box blank and exit the online survey without consequence. The consent box is required to be “checked” in order to move on to the next portion of the survey.

Participants read each survey question carefully and selected responses that best reflect their answers. The entire online survey should take approximately 5-10 minutes to complete. Participants who feel uncomfortable or unwilling to respond to any survey question had the opportunity to choose “prefer not to answer” as a response. Participants may also skip or not answer any questions and freely withdraw from participation at any time without consequences.

#### Protection of Human Subjects

Participants’ information, such as their name, was not requested, and their responses will be kept confidential and protected by being stored on a secure Google drive. Human subjects participating in the study will be exposed to no risk. Although it is not anticipated, some questions may cause discomfort for participants, which results in participants being able to select “prefer not to answer” as a response option. Each participant’s identity will be converted into

an ID number starting from “1” so that personal identifiable information will not be disclosed. Participants’ responses will remain protected by being stored on a secure Google drive. All collected data will be destroyed one year after the project has been completed.

### Data Analysis

Researchers converted the Qualtrics data into SPSS for analysis purposes. The demographic variables served for frequency distribution purposes. Because the data was not normally distributed, the researchers could not perform a Pearson correlation. Instead, the nonparametric route was taken to accommodate the data. Because the independent variable (COVID-induced stress) was binary and dependent variables (symptoms of depression and anxiety) were ordinal, the researchers used the Mann-Whitney U test. The goal was to determine whether there is a relationship between COVID- induced stress and symptoms of anxiety and depression.

### Summary

This study aims to analyze the relationship between COVID-induced stress and symptoms of anxiety and depression among undergraduate students. Data was collected from a target of 150 undergraduate students currently enrolled in a California State University. Undergraduate students from these schools will receive access to the online survey from school staff members such as their professors. Participants’ personal identifiable information and responses

will be stored and kept confidential in a secure Google drive. After collecting data, the study will input participants' responses into SPSS. Descriptive statistics will be generated and analyzed to study the relation between COVID-19-induced stress and symptoms of anxiety and depression in undergraduate students.

## CHAPTER FOUR

### RESULTS

#### Frequency Distribution

Almost half of the survey participants were Hispanic (45.2%) and slightly over two-thirds identified as female (68.8%). The vast majority of participants' marital status were single (92.5%) and were between the ages of 18-25 years old (94.6%). Nearly over four-fifths of the sample population were first year undergraduate students (82.8%). Only about one third reported earning \$10,000 or more annually (27%) while the remainder of participants either reported earning less than \$10,000 per year (65.5%) or preferred not to say (7.5%).

Table 1. Demographics

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*Sample Demographic Characteristics (N = 93)*

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Race/Ethnicity	N	%
Hispanic	42	45.2
African American	2	2.2
White	32	34.4
Non-Hispanic White	2	2.2
Pacific Islander	2	2.2
Asian American	4	4.3
2 or more races	9	9.7
Gender	N	%
Male	26	28
Female	64	68.8
Other/Prefer not to say	3	3.3
Marital Status	N	%
Single	86	92.5

Married	3	3.2
Divorced	1	1.1
Other	3	3.2
Age	N	%
18-25	88	94.6
26 or older	3	3.3
Prefer not to say	2	2.2
Education Level	N	%
1 <sup>st</sup> year undergraduate student	77	82.8
2 <sup>nd</sup> year undergraduate student	5	5.4
3 <sup>rd</sup> year undergraduate student	1	1.1
4 <sup>th</sup> year undergraduate student	2	2.2
5 <sup>th</sup> year or over undergraduate student	1	1.1
Prefer not to say	7	7.5
Annual Income	N	%
Less than 10,000	61	65.6
10,000 or more	25	27
Prefer not to say	7	7.5

---

## Data Results

This anticipated correlation analysis was not possible because the dependent variables are not measured at the scale level. The dependent variables are ordinal variables. Therefore, the parametric method route could not be taken by the researchers. Instead, the researchers utilized the non-parametric method of Mann-Whitney U Test. The Mann-Whitney U Test is consistent with the ordinal dependent variables and binary independent variable. The researchers then proceeded with the Mann-Whitney U Test in SPSS.

Results in Table 2 reveal that 1) there is no statistically significant relationship between Covid-induced stress and levels of anxiety ( $U = 734.500$ ,  $p = .066$ ). In other words, there was no statistical difference in anxiety levels

between participants who reported Covid-induced stress and those who did not. Similarly, the results in Table 2 demonstrate that Covid-induced stress is not related to levels of depression at a statistically significant level ( $U = 888.50$ ,  $p = .122$ ). That is, respondents who experienced Covid-induced stress reported a similar level of depression as their counterparts who did not experience Covid-induced stress.

Table 2. Mann-Whitney U Test Results

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*Mann-Whitney U Test Results for Anxiety and Depression as a Factor of Covid-Induced Stress*

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Independent Variables	Dependent Variables	U-Test	Significance Level ( $\alpha$ )
Covid-19 Induced Stress	Anxiety	734.500	.006
	Depression	888.500	.122

---

## CHAPTER FIVE

### DISCUSSION

This study analyzed the relationship between COVID-19-induced stress and symptoms of anxiety and depression in undergraduate students in Southern California. With dramatic institutional changes that took place such as virtual learning, cancellation of major events, mandatory lockdowns, and social distancing, it was crucial to understand how students' mental health were affected and what should be done in the future if another global disaster were to occur. The findings from this research project can provide the field of social work with a greater understanding of the mental health needs of college students and will inform the development and implementation of effective supportive services. A cross-sectional online survey was used to gather quantitative data. Mann-Whitney U Test concluded that there was no statistically significant relationship between COVID-induced stress and symptoms of anxiety and depression.

#### Implications of the Findings

##### Implications for Theory

The findings in this study have implications for the Person-In-Environment (PIE) theory. The Person-In-Environment (PIE) framework identifies social and environmental factors that contribute to and influence the behavior and health outcomes of undergraduate students. The framework encourages social workers to understand this population through a holistic lens where all aspects of an



individual's life, particularly the environment, partake in their behavior and health outcomes. The Person-In-Environment theory is justified by the findings of this research that reveal COVID-19 implications on the everyday life of undergraduate students in this study due to the level of stress they experienced. The framework is crucial in understanding and gaining greater awareness of the interrelated social determinates that undergraduate students face.

### Implications for Research

Previous studies focused more on the prevalence of mental health issues due to COVID-19 stress. For example, Lakhan et al. (2020) studied the prevalence of depression, anxiety, stress, and sleep problems during the first 7 months of the COVID-19 pandemic. The findings of the review demonstrated that the occurrence of mental health problems had increased in all populations. Son et al. (2020) conducted a study to assess the effects of COVID-19 pandemic on college students' mental health. Results indicate that 71% of college student respondents indicated an increase in stress and anxiety due to the COVID-19 pandemic.

While numerous studies on the effects of COVID-19 on mental health exist (e.g., Lakhan et al., 2020; Son et al., 2020), this research implements the importance of gaining a greater understanding of the effects of the pandemic on students, which is valuable in the development and implementation of effective services to support this vulnerable population. This study contributes innovative research in the domain of mental health in college students. Although there was

no significant relationship between COVID-induced stress with symptoms of anxiety and depression, nearly half of the participants experienced stress, anxiety, and depression. Therefore, this study's findings contribute significantly to the literature on mental health and the need for adequate services for undergraduate students experiencing mental health challenges.

#### Implications for Social Work Practice

The COVID-19 pandemic will continue to be a momentous area of research due to its impact on vulnerable populations. Considering the impact and mental health challenges college students faced during the pandemic, there is a need for adequate mental health services. Additionally, it is necessary that professional social workers attain appropriate training and preparation for a future crisis such as a pandemic. Social workers abide by the National Association of Social Workers (NASW) Code of Ethics because the profession strives to provide appropriate access to services, resources, and information to clients. The findings of this research can be utilized by social workers to better work with clients who may respond differently to stressors in the environment.

#### Implications for Policy

The COVID-19 pandemic was a great ordeal worldwide. Members of the community and professionals were not prepared for such a crisis. Therefore, it is crucial communities and professionals advocate for policies that provide and prepare individuals for future crises. Policies considered include the requirements for mental health training for health care professionals. Another policy

consideration is the necessity for federal and state funding to enable and increase access to care. Research on the COVID-19 pandemic encourages the implementation of programs to better allocate resources to vulnerable populations, which include college students and minorities.

### Limitations and Recommendations

A limitation of this research study includes its relatively smaller sample size ( $n = 93$ ). The initial total of respondents was nearly 170 respondents however, a portion of survey responses were left blank or unusable therefore lowering the sample size to only 93 participants. Another limitation of this research study is the geographical location and setting in which the study took place. The researchers distributed the survey only to undergraduate students in two universities of Southern California. As a result, the study's findings only reflect undergraduate Southern Californians, reflecting a lack of opportunity for a diverse sample population. In addition to having a limited sample size and location, this research was not a longitudinal study. Instead, the researchers employed a cross-sectional design, which only captured data from one point in time. Lastly, the usage of the Mann-Whitney U Test led to weaker results compared to parametric methods.

Future research should address this study's limitations by expanding their research to a greater demographic and geographical area. Surveying a larger population and location could potentially generate a more accurate representation of the study's objective. Second, future researchers should

conduct the study at more than one point in time in order to assess any differences or changes in responses. This will allow them to detect whether there were any increases or decreases in anxiety or depression symptoms in relation to COVID-induced stress. Finally, it is recommended that future researchers utilize parametric methods for the purpose of producing stronger results.

APPENDIX A  
INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

IRB #: IRB-FY2022-206

Title: HOW COVID-INDUCED STRESS IS RELATED TO SYMPTOMS OF ANXIETY AND DEPRESSION IN UNDERGRADUATE STUDENTS

Creation Date: 2-2-2022

End Date:

Status: **Approved**

Principal Investigator: Rigaud Joseph

Review Board: Main IRB Designated Reviewers for School of Social Work

Sponsor:

## Study History

Submission Type	Initial	Review Type	Exempt	Decision	Exempt
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## Key Study Contacts

<b>Member</b>	Rigaud Joseph	<b>Role</b>	Principal Investigator	<b>Contact</b>	Rigaud.Joseph@csusb.edu
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<b>Member</b>	Rigaud Joseph	<b>Role</b>	Primary Contact	<b>Contact</b>	Rigaud.Joseph@csusb.edu
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<b>Member</b>	Christina Ngo	<b>Role</b>	Co-Principal Investigator	<b>Contact</b>	christina.ngo6586@coyote.csusb.edu
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<b>Member</b>	Quenea Popoca	<b>Role</b>	Co-Principal Investigator	<b>Contact</b>	queneap@coyote.csusb.edu
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APPENDIX B  
INFORMED CONSENT FORM

### INFORMED CONSENT

The study in which you are being asked to participate in is designed to investigate your symptoms of anxiety and depression associated with COVID-19 induced stress. This study is being conducted by Quenea Popoca and Christina Ngo, graduate students under the supervision of Dr. Rigaud Joseph, Professor in the School of Social Work at California State University, San Bernardino. This study has been approved by the Institutional Review Board, California State University, San Bernardino.

**PURPOSE:** This study aims to understand how COVID-19 induced stress is related to symptoms of anxiety and depression among undergraduate students.

**DESCRIPTION:** Participants will be asked a series of questions about their symptoms of anxiety and depression during the pandemic, the frequency of symptoms, COVID-19 induced stress, and some demographics information.

**PARTICIPATION:** Participation is entirely voluntary and participants do not have to answer any questions they do not wish to respond to by selecting the “prefer not to answer” option. Participants may skip or not answer any questions and freely withdraw from participation at any time without consequences.

**ANONYMOUS:** Participants’ responses will remain anonymous and protected by being stored on a secure Google drive. All collected data will be destroyed three years after the project has ended.

**DURATION:** It will take approximately 5 to 10 minutes to complete the survey.

**RISKS:** There will be minimal to no short-term risks resulting from participating in this study. Although the risk is minimal, some questions may cause some discomfort for participants.

**BENEFITS:** No direct or tangible benefits will be awarded to the participants. However, findings from the study will contribute to our knowledge in this area of research.

**CONTACT:** If you have any questions about this study, please feel free to email Dr. Rigaud Joseph at [Rigaud.Joseph@csusb.edu](mailto:Rigaud.Joseph@csusb.edu).

**RESULTS:** Results of the study can be obtained from the Pfau Library ScholarWorks database (<http://scholarworks.lib.csusb.edu/>) at California State University, San Bernardino, after July 2023.

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By checking the box below, I understand that I must be 18 years of age or older to participate in your study, have read and understood the informed consent document, and agree to participate in this study.

I agree to participate in this study.



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## ASSIGNED RESPONSIBILITIES

The successful completion of this research project required the collaboration of the two researchers to work diligently together. The researchers met regularly to discuss and work on each chapter. The researcher's joint efforts in collecting data and maintaining open communication throughout the process proved to be instrumental in the project's finalization. Both researchers made equal and valuable contributions to the project, frequently consulting with each other, and seeking guidance from their supervisor along the way.