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Gabriella Aguinaldo
Dominican University of California

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**Mental Health and Adolescents:
The Impact of Social Isolation in Adolescents During The COVID-19 Pandemic**

Gabriella Aguinaldo

Dominican University of California

NURS 4500: Nursing Research and Senior Thesis

Dr. Patricia Harris

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Abstract

In early 2020, the coronavirus pandemic, first detected in late 2019, afflicted the world. The disease associated with the virus became known as COVID-19. COVID-19 was recognized as a highly contagious and deadly disease. In California, United States, COVID-19 was detected in February and the first shelter-in-place orders were ordered by the counties and state, which forced children and adults to stay at home and attend school and work virtually. Shelter-in-place orders were quickly implemented around the world.

As the world began this sudden switch in lifestyle, many were concerned for the mental health and safety of themselves and their family members. Although adolescents are known to be resilient when faced with adversity, the issues of mental health for this age group should not be taken lightly. This thesis explores how the COVID-19 pandemic affects the mental health of adolescents through a review of the research literature. This paper also assesses the interventions that some of the studies introduced to help adolescents cope with depression, anxiety, and stress. Although interventions implemented have shown a positive effect, there is still much to learn. Based on the literature review, this thesis proposes a study for further research which aims to gain more insight into the phenomenon of teenagers' mental health during the restrictions to socialization and movement required by shelter-in-place orders during a global crisis. A control group and an intervention group will be analyzed to measure levels of depression, anxiety, and sleep quality. Specifically, the goals are to help spread awareness of adolescent mental health during these challenging times and to investigate ways to support this population during this time, more than one year after the beginning of the pandemic.

Introduction

Toward the end of 2019, an infectious virus initially broke out in Wuhan, China. This virus is known as the Coronavirus. In early 2020, the novel virus hit the United States. Many lives have been affected and in various ways. This may be due to medical health reasons, the loss of businesses, and the mandatory stay-at-home orders. This novel virus is still a topic that is not fully understood, and caused states and counties to go into mandatory shelter-in-place. There are concerns about the mental health during the pandemic, more specifically, relating to the mental health of adolescents. Although many have concerns for the mental health of the older population during this time, adolescents are experiencing these same problems. Adolescents are a vulnerable population and are susceptible to mental health issues due to the great amount of physical and psychological changes they experience as they grow and develop. Technology aids in keeping the younger generation connected with school and social media, but spending time with peers and having in person social interaction are vital to adolescent development. Now, in 2021, even with the distribution of vaccines and businesses and schools slowly reopening, life after the pandemic may not easily return to what it was before. With social isolation still in effect after a year, this may still be taking a toll on the mental health of adolescents.

The question that this thesis aims to answer is: Do adolescents risk developing mental health issues such as depression and anxiety, due to social isolation, during the COVID-19 pandemic? We will attempt to answer this question through literature reviews and determine whether the provided studies were effective and satisfied the question asked. We will also propose a potential study to answer our research question.

Literature Review

The main purpose of this literature review is to break down the articles provided and find relevant research that is pertinent to COVID-19's mental health effects on adolescents. Although the novel Coronavirus has been around for a very short amount of time, ample research has developed within the past year. Most of the articles stem from countries that were first hit by the virus, including China. The search terms that were used to find the articles were: COVID-19 pandemic, mental health, adolescents, depression, and anxiety. PubMed and Iceberg were the two main databases used to find both primary and secondary articles regarding mental health and the COVID-19 pandemic. From the two databases used for the search, a total of twelve sources were chosen. Among the twelve articles, three were secondary sources and six were primary sources. Out of the twelve sources found, six of the primary articles were chosen to be broken down for the literature review.

This literature review will be split into three categories and each category contains articles from three different countries. These articles used different study designs to provide interesting results of how COVID-19 affects the mental health of adolescents, using different study designs. Some of those articles also explored potential interventions that would help improve the mental health of adolescents during the pandemic. After reviewing all six of the primary articles, the studies originated in China, Netherlands, and the United States. Three articles primarily came from researchers in China because the Coronavirus affected this country first. Two articles originated from the Netherlands. Only one article that originated from the United States

Studies from China

The three articles from China were all published in early 2020, where the virus had infected a large amount of its citizens. Since China was the first country to be hit hard by this pandemic, they had a sufficient amount of research published. These articles provide an

interesting flow in chronicity. One article only studies the effects of the pandemic on adolescents' mental health. The second article not only tests whether or not the pandemic has affected adolescents, but the general population. This leads the researchers to introduce a call to action for the country. The third article introduces an intervention to help aid in the decrease of depression and anxiety the pandemic has caused in China.

A study from the Department of Social Medicine and Health Management at the School of Public Health at Jilin University, China assessed the mental health of youth after two weeks of the COVID-19 outbreaks. This study aimed to examine the extent to which youth groups were prone to psychological problems due to COVID-19 and explore the correlation between questionnaires. The researchers used a cross-sectional study based on multiple miniature questionnaires distributed online through a group chat called WeChat. With this type of study design, researchers analyzed the outcomes or data from a population at a specific point in time. Eventually, the questionnaires reached 610 people, in which 584 fully completed questionnaires were analyzed. The study consisted of four questionnaires: Questions about the participant's cognitive status of COVID-19, General Health Questionnaire, PTSD Checklist- Civilian Version and the Negative Coping Styles Scale. These tests are used to determine whether the participants have underlying issues that may cause an increased tendency of psychological problems. Additionally, they studied whether the lack of education about COVID-19 plays a role in the effects of youth mental health.

As a result, "nearly 40.4% the sampled youth were found to be prone to psychological problems and 14.4% the sampled youth with Post-traumatic stress disorder (PTSD) symptoms", during the first two weeks of COVID-19 (Liang et al., 2020, pp.1). Thus, leading to the conclusion that infectious diseases, such as COVID-19, may have an influence on youth mental health. Although researchers concluded that there was a significant negative mental health effect

in the participants, they had some limitations. The researchers determined that using a cross-sectional study was less effective and would have performed a longitudinal study in the future. The reliability of the self- reflection questionnaires raised concern for whether the reflections were truthful and not altered to satisfy the study. This study had a different approach than the other studies, but unfortunately did not provide strong evidence to support their claim.

Another study investigated the effects of the COVID-19 pandemic on the general population in China during the initial outbreak, and then again at the peak of the epidemic four weeks later. The focus of this study is to find a solution to help reduce the negative effects such as depression, stress, and anxiety that the pandemic is causing. The researchers also aimed to enforce a call to action to spread awareness of this situation.

This study used a longitudinal, quantified study. Using the longitudinal approach, researchers follow a cohort of subjects and collect the data over time. Whereas in the previous study, cross-sectional research only collected data at a specific point in time and does not have follow-up data collections. Participants were collected through a survey platform called “SurveyStar,” which was posted on the Huaibei Normal University website. Out of 1,738 respondents from 190 cities in China, 1,210 participated in the first survey, 861 in the second survey, 333 participated in both. First survey was distributed January 31 with the deadline on February 2, 2020 and the second survey followed soon after from February 28 to March 1, 2020. Both of the surveys were sent out in forms of questionnaires. The tools used to measure the data were: Impact of Event Scale-Revised (IES-R) and the Depression, Anxiety and Stress Scale (DASS-21). The IES-R measures PTSD symptoms during or after a traumatic event or global crisis. DASS-21 is a tripartite model of psychology that formulates general distress with distinct characteristics (Wang et al., 2020).

As a result, this study found that there was a statistically significant longitudinal reduction in mean IES-R scores (from 32.98 to 30.76, $p < 0.01$) after four weeks (Wang et al., 2020). Even though the mean IES-R score of the first and second survey were above the cut-off scores for PTSD symptoms, the reduction in scores was not clinically significant. Interestingly, moderate-to-severe stress, anxiety and depression during the initial survey were noted in 8.1%, 28.8% and 16.5%, and there were no significant longitudinal changes in stress, anxiety and depression levels (Wang et al., 2020).

The third study, performed in Guilin, Guangxi, China aimed to implement an intervention called the Model 328. Model 328 is a psychological support form of peer education used by the adolescent group to intervene with the anxiety, depression, and sleep problems of young people, during the COVID-19 pandemic. Through this study, the goal was to provide reference on improving adolescents' mental health level during this crisis (Ding et al. 2020).

This study used a quantitative, comparative study design with participants aged 12 to 18 years in age. The participants were separated into two groups, the control group and the intervention group, including 75 participants each. The participants' feedback was compared before the intervention and after providing the Model 328 peer education. Researchers determined whether the Model 328 intervention would help the students facing depression, anxiety, and sleeping problems. Data was measured by Self-rating Anxiety Scale (SAS), Self-rating Depression Scale (SDS), and Pittsburgh Sleep Quality Index (PSQI).

As a result, researchers found a significant decrease in the SAS and SDS in both the controlled and intervention group, two months after the intervention. The groups PSQI scores of the two groups both documented a significant decrease in sleep loss after the two months of intervention. This concluded that the interventions did not show immediate results, but both groups showed positive outcomes over time.

The articles attempted to determine whether the COVID-19 pandemic affected the mental health of adolescents, but due to undetermined results the studies do not provide enough evidence to confirm there was an effect. In this study, extending the duration of the surveys may provide a better result. Interestingly, the study from Guilin, Guangxi, China provided evidence that adolescents are facing mental health issues, but the intervention began to provide positive outcomes. Although these articles concluded that the effects of COVID-19 on adolescents were undetermined, interventions such as the peer-education, helped improve depression, anxiety, and sleep loss in general. This psychological support of participants during a time where social interaction is necessary for development, but is limited, benefited the participants in this study.

Studies from the Netherlands

The two articles that originated from West Europe are both focused in the Netherlands. Both articles were published in the later months of the pandemic - October 2020. One article measures both child and parent behaviors during the pandemic, which may be interesting to note for the proposed study. The other article introduces an intervention in which provides impressive insight to whether this pandemic truly affects the mental health of adolescents. The study reveals a unique characteristic that adolescents have when dealing with the pandemic.

A study from the Institute of Psychology at Leiden University in the Netherlands investigated positive or negative effects of both adolescent and parenting behaviors. It aims to find possible explanations for the hypothesized changes that affect parenting (Janssen et al., 2020). In this study, 67 Dutch parents and 34 adolescents participated. The children's ages ranged from 14-19 years old. The study uses a longitudinal, quantitative, comparative study. The study is based on the baseline data of an on-going Dutch multi-method two-generation Relations and Emotions in Parent-Adolescent Interaction Research (RE-PAIR) study (Janssen et al., 2020). The second study was an Ecological momentary assessment study (EMA); An EMA is

the repeated sampling of subjects current and experiences in real time. EMAs were completed by the families between September 2018 and November 2019, excluding holidays and when the children had school examinations. They compared the daily reports on parenting behaviors gathered during two periods of 14 consecutive days, once before the COVID-19 pandemic and once during the COVID-19 pandemic.

The researchers found that during the COVID pandemic the most reported difficulty was from the parents. After the 14 days, the EMA concluded that the parents were facing lack of social contact with friends, general concerns of the virus, irritation with family members, health worries, and COVID related news. The adolescents were reporting difficulties concerning boredom, missing social contact with friends, irritation from family members, homework, and worries about the health of others (Janssen et al., 2020). The common denominator with both groups is turning to electronic devices and online games to pass the time. This study surprisingly concluded that parents showed more negative effects such as loneliness and bolstered mental well-being. The adolescents, on the other hand, seemed to adapt quicker due to technological access.

Another article from Erasmus School of Social and Behavioral Science in the Netherlands, investigated whether the COVID-19 pandemic affected Dutch adolescents' mood, empathy, and prosocial behaviors. They also introduced an intervention by using hypothetical Dictator Games with ecologically valid targets associated with the COVID-19 pandemic (van de Groep et al., 2020). The Dictator Game is an economic game that is designed to question the standard economic assumptions that individuals will act solely out of self-interest (Guala et al., 2010). This study was part of a larger longitudinal study on prosocial development called "Brainlinks." This type of study was a cohort-sequential longitudinal study. This meant that this

type of experimental study collects multiple measurements over a period of time from two or more groups of different ages.

In this case, the participants were aged 10-20 years old. Researchers collected the data through the Dictator Game, in which the child is given certain people or targets of interest: an unknown person, a familiar friend, an individual with a poor immune system, an individual with COVID-19, and a doctor working at a hospital. The child has to describe who to give their resources to during the COVID-19 pandemic. In addition to the data from the game, the adolescents were asked to keep a daily diary during pandemic prosocial experiences and behavior. This was in the form of an online questionnaire. The first wave of questionnaires was distributed May-October 2018, and the second wave was distributed August 2019-October 2020. The study revealed intriguing results. The levels of empathic concern and opportunities for prosocial actions decreased in the early weeks of the COVID-19 pandemic. However, over time, the adolescents began to show resilience and a positive progression in prosocial behavior. They started to become more willing to help others. Despite the pandemic affecting a crucial period in adolescent development, the participants showed resilience and positive results in social interaction.

These two articles provided very engaging information regarding the behaviors of adolescents during the pandemic. The results discovered in the studies provided insight on how resilient children, especially adolescents, can be when facing a crisis. These articles both concluded that adolescents adapted in a positive way during the pandemic and that the parents in one of the studies were the cohort that was struggling the most. This provides a different perspective on the mental health of adolescents compared to the results from China.

Study from the United States

Out of all of the 6 primary articles collected, only one of the studies originated from the United States. This study was published much later than the other articles due to the delay in urgency of the pandemic and the lack of information. This study aimed to determine whether the pandemic affected the mental health of adolescents in Long Island. This city was one of the first areas affected by the virus in the United States. This city was severely impacted by the pandemic, reaching nearly 300,000 cases of coronavirus (Centers for Disease Control, 2020 as cited by Hawes, et al., 2021). Having an article originating from the United States will benefit in providing information for the proposed study, which will have a target population in the same region. This article provides insight into certain factors that may have contributed to negative effects of the pandemic.

Researchers from Stony Brook University, Department of Psychology, New York, explore the impact of the COVID-19 pandemic on depression and anxiety symptoms in adolescents and young adults. This study measured change in symptoms from before and during the pandemic, and explored the impact of various pandemic-related experiences on symptom changes (Hawes et al., 2021).

Two longitudinal surveys for a quantitative study were used. The non-random sample included 451 adolescents and young adults who participated in one of two longitudinal investigations. One study used self-reporting questionnaires, such as the Child Depression Inventory (CDI): self-report questionnaire to assess depression symptoms. Participants seven through seventeen years of age were assessed over two weeks. The other was a Screen for Child Anxiety-Related Disorder (SCARED): a self-reported measure of anxiety disorder symptoms in participants ages eight-eighteen years old. This group was observed over a span of one month. Much like the previous articles, this study concluded that there was a generalized increase in anxiety and social anxiety symptoms. More specifically, the females had increased depression

and panic somatic symptoms compared to their counterparts. This literature suggests that females are more likely to develop internalizing symptoms following exposure to stress and trauma (Tolin & Foa, 2008 as cited by Hawes et al., 2021). Multivariable linear regression indicated that there were two factors: School and home isolation, that influenced the increased amounts of reported anxiety and depression. COVID-19 school concerns were uniquely associated with increased depression symptoms and stay-at-home concerns were uniquely associated with increased generalized anxiety symptoms (Hawes et al., 2021). As a result, Hawes and colleagues concluded that there are many types of adverse effects to adolescent mental health, including a variety of factors which can cause these effects.

Although this article used similar study design, the results had a definitive correlation with contributing factors. This study gave more insight on factors that play a large role in why social- isolation and the mandatory lockdown has affected adolescents. It made sense that the concerns specific to the adolescents such as school and home confinement impacted their mental health. School is a vital part of adolescent life because typically school is where they would be around this age. Also, with home confinement, they are lacking in person peer interaction that team sports and school or extracurricular activity provide. The studies from China validated that psychological peer- support for adolescents is necessary for students to help manage their depression and anxiety.

Overall Discussion of Analysis

After analyzing through the chosen articles, it was very interesting to see similarities in the studies but also some variability between them. The majority of the research used longitudinal, quantitative studies, but one used a cross sectional study. The study from Liang and colleagues, concluded that using a cross sectional study did not bring strong enough evidence to determine whether the pandemic really affected the participants. Longitudinal studies seemed to

be a stronger way of gathering data. Another interesting finding was from Jassen and colleagues, in which the study also used a longitudinal study, but measured the behavior of both parents and the child. This specific study found that parents showed more negative effects of depression and anxiety than their children. Similarly, van de Groep and colleagues' study concluded that adolescents did show some negative effects during the pandemic, but as the lockdown continued, they showed resilience and the results turned out to trend positively.

Overall the studies helped gain a better understanding on adolescent mental health especially during a global crisis. The limitations were similar in all of the studies. One example of a common limitation is the duration of the studies. The duration of the studies during the pandemic were not long enough to see solid results over time. This was shown during the studies that introduced interventions. The interventions did not make any significant changes immediately. However, the Model 328 peer education and the Dictator Game showed a positive effect overtime. If the study was longer, there would have been even stronger evidence. With the provided articles, we can conclude that adolescents did face an increase of depression and anxiety during the pandemic. In contrast, more evidence is needed to confirm whether the regulations of the COVID-19 pandemic significantly increased these negative effects. Proposal for Further Study

Proposal for Further Research

Literature Review Relevance

After assessing the literature review, gaps were identified, and additional questions arose. One prominent gap in several studies was the short duration of time allotted to gather data. Many of the studies (Liang et al., 2020, Wang et al., 2020, and Ding et al., 2020) mentioned that the

amount of time for data collection was too brief. The researchers concluded the inability to investigate change over time was the main reason why they could not determine a definite result. In the studies with interventions, researchers also expressed a need for more time to determine if the intervention will continue to have a positive outcome. Now that it has been a year since the first shelter-in-place orders were put into effect, vaccines to combat the virus have been developed and are being widely distributed. The spread of the virus is becoming more restricted, and the expectation is that the COVID-19 pandemic precautions will be lifted soon. Daily life is slowly coming back to a normal trend, and it will be interesting to observe how adolescents' depression and anxiety levels along with quality of sleep change as barriers to social contact are lifted.

The literature review indicated that the pandemic caused a negative effect on adolescents, including increased levels of depression, anxiety, and loss of sleep. This negative impact was due to the social isolation from the lockdowns and other factors such as closure of parks, schools, and sports. The review of the research literature revealed that adolescents experienced a decrease in the negative effects of isolation when an intervention was implemented. Although these interventions did not change the results right away, they began to show a positive trend over time.

Primary Proposal Research

- This research aims to:

1. Compare adolescents' levels of depression and anxiety along with their perception of sleep quality while social restrictions are still in place with these three mental health factors after restrictions have been lifted.
2. Assess the changes in adolescents' mental health status over a one-year period from the present time of worldwide lock-down to a time that we anticipate will allow more social activity and openness.
3. Determine what other factors could contribute to the increase in levels of depression and anxiety, and quality of sleep, as described in the research literature (Ding et al. 2020), besides social isolation.
4. What interventions, if any, might contribute to adolescents' capacity resilience and improve coping abilities of adolescents whose mental health has been impacted by the social isolation required to protect public health during the COVID-19 pandemic?

Research Questions

After a whole year of the pandemic, is there still an increased amount of depression and anxiety in adolescents? What are the other factors contributing to mental health changes, if any? Would interventions, implemented and designed to aid adolescents' mental health during the pandemic, benefit this population more than the introduction of new post-pandemic interventions? What methods did the participants use or do to help cope with depression, anxiety, and lack of sleep?

Theoretical Framework

Social isolation can affect a person's mental health, especially in adolescence. This cohort is still developing and trying to figure out who they are and what they want to be. According to Palmer's (2017) "Pediatric Nursing Care A Concept Based Approach", Erikson's Theory of Psychosocial Development is one of the four theories that helps us better understand the developmental stages of childhood and adolescents. Erikson's Theory of psychosocial development mentions that during the adolescent period they are faced with self-identity versus role confusion. This is the stage where the adolescent tries to find a sense of who they are. Self-awareness and self-understanding allow them to express themselves and share themselves with others (Palmer, 2017). Around this time of development, adolescents are more peer-related in their play and recreation. Teens tend to lean toward wanting more independence from their parents and seek more acceptance among their peers.

Understanding the impact of this pandemic on this age group is a vital step toward finding positive ways to help teenagers cope as communities become safer and people cautiously venture out again. The year-long lack of social interaction could have long-term effects. Team sports, hang-out groups, and clubs are how this cohort interacts. The closure of these main locations where adolescents most likely socialize, makes gaining social stimulation much more difficult, if not impossible. Despite the video gaming community, the lack of physical, social interaction can cause a feeling of loneliness leading to depression and social anxiety. In addition to isolation, adolescents face a whole new stressor during the stay-at-home orders. "There is a

continuous need for children to adapt daily to a new sense of ‘normal’ as the pandemic evolves” (Henderson et al, 2020, pp.269).

Research Method

The research method that will be used to obtain data are surveys: general demographic information of the participants and depression and anxiety scales. The depression and anxiety scales will be Likert style questions. The study will start. with a screen survey will consist of 20-questions that will gather baseline data. The screening survey will be available during the enrollment period, i.e. four months from March 15th through July 15th, 2021. In addition to the depression, anxiety, and sleep quality questions, participants will be asked how they tried to cope with the depression and anxiety during the pandemic.

The research goal will be to track and measure whether participants’ depression, anxiety, and quality of sleep improved, stayed the same, or worsened within a span of one year. The plan is to start the study at a point in time when restrictions on social contact due to the COVID-19 pandemic are loosened and document changes that take place, if any, over a one-year period. Further, differences in anxiety, depression, and sleep quality scores between the intervention group and control group will be measured. Depending on the results of the survey, knowledge about effective interventions or solutions may increase and plans to implement ongoing services to help these adolescents can be put in place.

Survey Preview

Demographic Questions (4):

Age:

Gender:

Ethnicity:

School Grade:

Use of counseling services: Yes / No (if yes, answer the next question)

Distance from counseling services:

Anxiety Questions (4): A modified version of the Hamilton Anxiety Rating Scale (HAM-A)

(These questions will be answered with the use of the five-point Likert Scale:

(1) Not Present; (2) Mild; (3) Moderate; (4) Severe; (5) Very Severe)

i.e. Please rate the following statements:

1. Anxious Mood: Feelings of decreased worries, anticipates the worst, fearful anticipation and irritability after the pandemic.
2. Tension: Feelings of decreased tension, fatigability, startle response, moved to tears easily, trembling, feelings of restlessness, inability to relax after the pandemic.

(Hamilton, 1959)

Depression Questions (4): A modified version of the Beck Depression Inventory (BDI)

(These questions will be answered with the use of the scoring scale)

i.e. Please score the following statements:

1. (0)I am not particularly discouraged about the future, after COVID

- (1)I feel discouraged about the future, after COVID
- (2)I feel I have nothing to look forward to, after COVID
- (3)I feel the future, after COVID is hopeless and that things cannot improve
- 2. (0) I am no more irritated by things than I ever was, after COVID
- (1)I am slightly more irritated now than usual, after COVID
- (2)I am quite annoyed or irritated a good deal of the time, after COVID
- (3)I feel irritated all the time now, after COVID

(Beck, 1961)

Sleep quality questions (4): A modified version of the Pittsburgh Sleep Quality Index

(These questions will be answered with the use of the five-point Likert Scale)

i.e. 1. During the past year, how would you rate your sleep quality overall?

(0) Very good; (1) Fairly good; (2) No Change; (3) Fairly bad; (4) Very bad

2. During the past year, how would you rate your energy to keep up enough enthusiasm to get things done?

(0) Very good; (1) Fairly good; (2) No Change; (3) Fairly bad; (4) Very bad

(Oakland Psychiatric Associates (n.d))

Coping Questions (2):

These questions will be answered with the use of a five- point Likert scale of: (0)

Alcohol and Substance abuse; (1) unhealthy habits (ex. Weight gain or loss); (2)

Exercise; (3) Personal Hobbies; (4) other *if other, please state below

i.e. 1. What coping method was effective when managing stress, during the COVID- 19 Pandemic?

2. What coping method was ineffective when managing stress, during the COVID- 19 Pandemic?

These questions will be derived from other resources and will be modified to fit the study's objectives. These questions will be reviewed by a certified psychologist to ensure the validity of the questions for the proposed study.

Sample Description and Size

The study design will be a prospective, quantitative, and longitudinal, utilizing a descriptive, comparative approach. The focus of the study will be on closely examining the adolescent population to determine how severely the teenagers are impacted by the COVID- 19 pandemic and its aftermath. The study will also examine resilience and the trajectory along which adolescents' mental health proceeds along during this time of rapid change. This will measure the target population's levels of depression, anxiety, and sleep quality. The population the sample will represent is pre-adolescents and adolescents in Northern California. The total sample will include 100 pre-adolescents and adolescents, ages 12-18 years of age enrolled in school in the Eastside of San Jose Bay Area in California. To recruit, information about the study will be sent out to local elementary schools, middle schools, and high schools in the Eastside of San Jose. Written posters and verbal announcements describing the study will be provided to the school with the approval of school principals or directors. Students will be given contact information for contacting the researcher and those who are interested will be able to obtain more details. This will be a convenience sample.

Ethical Considerations

The Dominican Internal Review Board (IRB) will review the study protocol for ethical concerns. No participant recruitment or data collection will take place prior to obtaining IRB approval. We want to keep the survey strictly confidential by only allowing the researchers to have the password for access to the information. Since many individuals who choose to participate in the study may be minors, i.e. age 17 years or younger, a consent form from a parental guardian will be required. The study will need to be explained to both the parent and the participant, who is a minor. Providing an assent form to the adolescent who is under the age of 18 years and allowing the potential participant to make an informed decision, is required. Participants who are 18 years of age will be able to sign their own consent forms. With an online survey, DocuSign will be utilized to obtain a signature for consent from the parent or guardian as well as a signature for assent from the adolescent.

Methodology

Participants will be divided into two groups, an intervention group, and a control group, of 50 participants each. The demographics for each group will be matched as closely as possible. Within each group, the participants will be further divided into smaller groups of 10 participants each. The small sub-groups in the intervention group will be provided with targeted services, including education (on anxiety and depression coping strategies and improving sleep quality), a monthly support group with direction from a facilitator, and monthly individual counseling. The

control group will be provided with the optional opportunity for meeting as an informal group periodically.

At the beginning and end of the study, participants will meet in person with the researcher and will be asked to fill out a comprehensive survey that includes demographic information, and questionnaires to gather information about participants' experience of three important mental health factors (discerned from the review of the literature): 1) Depression; 2) Anxiety; 3) Sleep disturbances. Once per month, participants will be sent a link asked to fill out an online Qualtrics survey that briefly asks about anxiety and depressive symptoms, and sleep quality. Qualtrics is a survey application that allows collection of data without collecting any of the participants private information.

Data Analysis

First, descriptive statistics will be used to determine the demographic characteristics of participants and the percentages who are experiencing depression and anxiety at the start of the study. Next, to examine the change in participants' responses over time and discern the differences in the changes between the two groups, a repeated-measure analysis of covariance (ANCOVA) with creation of a mixed-effect model will be used. This analysis will allow for the control of extraneous variables, such as age, gender, school grade, location (distance from services), and the use of a counselor or therapist by a participant other than the services provided by the study. In this type of design, relationships between a number of the variables can be

closely examined and interpreted. The research is designed to recognize trends and patterns in data without proving causality.

Conclusion

After analyzing the literature and proposing a study for further research, we have gained more knowledge about the impact of social isolation in the adolescent population. The studies examined in the literature review, which included studies from three different parts of the world, concluded with similar results, providing substantial evidence that there was an increase in depression and anxiety during the pandemic.

Now we have gained insight into how a global crisis such as the COVID-19 pandemic can affect mental health. A support plan with access to resources can be implemented to aid children and adolescents during these tough times. Although a global pandemic does not happen often, having mental health services in place early to better assess and treat individuals as fast as possible, if another crisis hits, will benefit the public health and safety of the whole community.

The proposed study could give us a good idea of effective interventions, by measuring the potential changes over time in depression, anxiety, and insomnia in adolescence. This research will help advance the profession of nursing in hope of spreading more awareness about adolescent mental health specifically in California. Next steps concerning social isolation and adolescent mental health should be to continue to spread awareness and be ready with evidence-based support services. This can also help nurses further advocate and support adolescent mental health during a crisis.

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Appendix

Authors/Citation	Purpose/Objective of Study	Sample - Population of interest, sample size	Study Design	Study Methods	Major Finding(s)	Strengths	Limitations
<p>Ding, X., & Yao, J. (2020). Peer education intervention on adolescents' anxiety, depression, and sleep disorder during the COVID-19 pandemic. <i>Psychiatria Danubina</i>, 32(3-4), 527-535. doi:10.24869/psyd.2020.527.</p>	<p>Purpose: Provide reference on improving adolescents' mental health level during the COVID-19 pandemic.</p> <p>Objective: To test if Model 328-peer education will benefit the students experiencing anxiety, depression, and sleep problems during the pandemic.</p>	<p>N= 1,200</p> <p>Population: Students in Junior one, Junior two, Senior one, and Senior two in China</p> <p>Aged 12to 18 years in age</p> <p>Convenience sampling method</p>	<p>Quantitative, Comparative</p>	<p>Online electronic questionnaire survey, randomly divided a total of 150 middle school students. 75 students in the control group and 75 students in the intervention group</p>	<p>After two months SAS (self-rating anxiety scale): before intervention, the groups showed no signs of change. After two months of intervention, the groups reported signs of decreased anxiety symptoms.</p> <p>SDS (self-rating depression scale): after the intervention, groups did not show change, but after two months of intervention, the groups showed signs of decreased symptoms.</p>	<p>This experiment was beneficial in gathering information to further understand the mental health of adolescents and young adults.</p> <p>Helped offers new perspective in the importance of combining exercise and psychological intervention</p>	<p>Lost contact with 5 members in the intervention group and 4 members in the control group.</p> <p>Study targeted non-graduating students, but should have paid attention to the mental health problems of graduating students.</p> <p>Intervention only lasted 2 months in the pandemic, for futures research should extend the intervention</p>

					<p>PSQI (Pittsburgh sleep quality index): Before intervention, little to no change was experienced by the participants but after the two months of intervention, participants reported decreased sleep loss.</p> <p>Although anxiety decreased after intervention, children still had an elevated anxiety level a month with the intervention.</p>		<p>until the end of the pandemic.</p> <p>Should apply various intervention methods to improve the intervention outcome.</p>
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<p>Hawes, M. T., Szency, A. K., Klein, D. N., Hajcak, G., & Nelson, B. D. (2021). Increases in depression and anxiety symptoms in adolescents and young adults during the COVID-19 pandemic. <i>Psychological Medicine</i>, 1-9. doi:10.1017/S0033291720005358</p>	<p>Purpose/ Objective: Explores the impact of the COVID-19 pandemic on depression and anxiety symptoms in adolescents and young adults living in Long Island. New York.</p>	<p>N= 451 population: Adolescents and young adults from Long Island, New York. Aged 7-18 years old</p>	<p>Two Longitudinal Surveys for Quantitative Study</p>	<p>1) Children’s Depression Inventory (CDI): self-report questionnaire to assess depression symptoms over 2 weeks in ages 7-17 years old. 2) Screen for Child Anxiety-related disorder (SCARED) : self-report measure of anxiety disorder symptoms over past month in ages 8-18 years old.</p>	<p>All across the board and independent of age, there was a increase in both generalized anxiety and social anxiety symptoms Prominently in females, there was an increased depression and panic/ somatic symptoms. Concluded that home confinement concerns were associated with increased generalized anxiety symptoms.</p>	<p>Strength in longitudinal design to capture within- person experiences to measure changes in symptoms. First hand experiences of living through the pandemic were documented.</p>	<p>The attrition rate raises concerns about generalizability of the findings. Participation was non-random. Short period of time to measure accurate baseline pre-covid, therefore an inability to directly determine whether the increase of symptoms was caused by the pandemic</p>
<p>Janssen, L. H. C.,</p>	<p>Purpose:</p>	<p>N= 101</p>	<p>Longitudinal, Quantitative,</p>	<p>Study based on baseline data of</p>	<p>During the COVID pandemic</p>	<p>The study method gave</p>	<p>Small sample size and the</p>

<p>Kullberg, M. J., Verkuil, B., van Zwieten, N., Wever, M. C. M., van Houtum, Lisanne A. E. M., . . . Elzinga, B. M. (2020). Does the COVID-19 pandemic impact parents' and adolescents' well-being? an EMA-study on daily affect and parenting. Plos One, 15(10), e0240962. Retrieved from https://doi.org/10.1371/journal.pone.0240962</p>	<p>Investigating whether the COVID-19 pandemic affected parents and adolescents and parenting in a positive or negative way.</p> <p>Objective: Finding explanation for the hypothesized changes in affect and parenting.</p>	<p>34 adolescents and 67 parents. Baseline participants were aged 11-17 years old and had at least one primary caregiver living at home with them in the Netherlands.</p>	<p>Comparative study with multiple assessments per day</p>	<p>the on-going Dutch multi-method two-generation RE-PAIR (Relations and Emotions in Parent-Adolescent Interaction Research) study. Examining the relationship between parent-child interactions and mental health of the adolescent.</p> <p>Ecological momentary assessment study (EMA): EMAs were completed by the families between September 2018 and November 2019, with the exception of holidays and</p>	<p>the most reported difficulty during the 14 days of EMA for the parents were lack of social contact with friends, general concerns of the virus, irritation with family members, health worries, and COVID related news.</p> <p>Adolescents' difficulties were reported to be boredom, missing social contact with friends, irritation from family members, homework, and worries about the health of others.</p> <p>Most of the helpful activities had both the parents and the adolescents turning to</p>	<p>more detailed insights in the affects and parenting behavior in both adolescents and parents daily life.</p> <p>Testing both before and during the pandemic to detect changes.</p>	<p>sample size consisted of overall healthy parents and adolescents.</p> <p>Impact of stress can be altered by mindsets and appraisals of stressful events. The factor to consider is the adaptive mindsets about stressful events might increase positive emotions and reduce negative health symptoms.</p>
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<p>org/10.1371/journal.pone.0240962</p>				<p>when the children had exams.</p>	<p>electronics such as online games and television.</p> <p>Parents showed more negative effects such as loneliness and bolstered mental well-being during the COVID-19 pandemic. Whereas the adolescents seemed to be doing better due to technology access.</p>		
<p>Liang, L., Ren, H., Cao, R., Hu, Y., Qin, Z., Li, C., & Mei, S. (2020). The effect of COVID-19 on youth mental health. <i>Psychiatric Quarterly</i>,</p>	<p>Purpose: To assess the youth mental health after the COVID-19 in China and investigate factors of mental health among youth groups.</p>	<p>N= 584</p> <p>Sample collected by Wechat circles of friends. Participants were mainly young people ages 14-35 years old, living in China. Majority 21-30 years old</p>	<p>Cross-sectional study</p>	<p>Miniature tests were given to measure the mental health of the participants.</p> <p>Knowledge about COVID-19: baseline knowledge of the virus.</p> <p>The General Health Questionnaire</p>	<p>Mental health problems remain serious among most of the youth group during a public health emergency.</p> <p>Factors contributing to youth mental health were PTSD symptoms and negative coping styles as well as</p>	<p>Gave insight into the thoughts and opinions of the younger population</p>	<p>Using a cross-sectional design can not provide strong evidence for causality.</p> <p>In future studies the use of longitudinal designs will be more effective.</p> <p>Reliability and subjectivity raised issues</p>

<p>91(3), 841-852. doi:10.1007/s11126-020-09744-3</p>	<p>Objective: Examine the extent to which youth groups were prone to psychological problems due to COVID-19 and explore the correlation between questionnaires.</p>			<p>Scale: self-assessment screening tool consisting of options. The PTSD Checklist-Civilian Version: Measure post traumatic stress symptoms with respect to COVID-19 Simplified Coping Style Questionnaire: Measuring the negative and active coping styles.</p>	<p>low education levels and enterprise employees.</p>		<p>when using self-reported questionnaires. Using a larger subject size might be needed in future studies.</p>
<p>van de Groep, S., Zanolie, K., Green, K. H., Sweijen, S. W., & Crone, E. A. (2020).</p>	<p>Purpose/ Objective: Demonstrates detrimental effects of the first weeks of lockdown on adolescents empathic</p>	<p>N= 142 Participants aged between 10-20 years old, living in the Netherlands. Parents of the participants younger than 16 years old provided</p>	<p>Cohort-sequential longitudinal study</p>	<p>Investigation of the neutral development of prosocial behavior. One wave in May-October 2018 and second wave August</p>	<p>Levels of empathic concern and opportunities for prosocial actions decreased during the COVID-19 pandemic. However, over</p>	<p>Intensive daily diary assessments during the pandemic. Multiple assessments increase</p>	<p>The Dictator Game is only hypothetical and does not involve real money therefore, there is concern of</p>

<p>A daily diary study on adolescents' mood, empathy, and prosocial behavior during the COVID-19 pandemic. Plos One, 15(10), e0240349. Retrieved from https://doi.org/10.1371/journal.pone.0240349</p>	<p>concern and opportunities for provincial actions. Aims to investigate the effects of mood, empathy, and prosocial behavior on Dutch adolescents, during the pandemic.</p>	<p>written informed consent.</p>		<p>2019- October 2020. Daily diary of the adolescents' peri-pandemic prosocial experiences and behavior. Data collected via online questionnaires in Qualtrics. The use of novel hypothetical Dictator Game with ecologically valid targets associated with the COVID-19 pandemic.</p>	<p>time, the adolescents began to show resilience and a positive progression in prosocial behavior. They started to become more willing to help others Despite the pandemic affecting a crucial period in adolescent development, the participants showed resilience and positive results in social interaction.</p>	<p>robustness and reliability. Measurements were obtained pre- and peri-pandemic, capturing early experiences during the pandemic. Dictator Game helped measure the willingness to help and prosocial behavior.</p>	<p>ecological validity. Daily diaries introduced self-selection bias. COVID-19 might impact the saliency of other emotions than tension and vigor, such as fear which can affect the participant's prosociality. Only addressed immediate experiences, the first week of lockdown. future studies should examine long term.</p>
<p>Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., McIntyre, R. S., . . . Ho, C.</p>	<p>Purpose: Investigating how the mental health of the general population is affected during the</p>	<p>N= 1,738 1,738 respondents from 190 cities in China. 1,210 participated in the first survey, 861 in the second survey,</p>	<p>Longitudinal study, Quantitative study</p>	<p>First survey (January 31- February 2 2020) and second surveys (February 28- March 1, 2020) were sent out in</p>	<p>Longitudinal reduction in mean IES-R scores after 4 weeks Identified specific target groups (youth and</p>	<p>Suggesting and spreading a call to action toward the government to focus more on effective</p>	<p>General population sampled during the two surveys were not the same respondents.</p>

<p>(2020). A longitudinal study on the mental health of the general population during the COVID-19 epidemic in china. Brain, Behavior, and Immunity, 87, 40-48. doi:https://doi.org/10.1016/j.bbi.2020.04.028</p>	<p>COVID-19 endemic in China. Objective: Finding a solution to prevent these negative effects from happening.</p>	<p>333 participated in both.</p>		<p>forms of questionnaires. Survey was posted on the university website and was completed through an online survey platform (Survey Start). Respondents were encouraged to invite new respondents from their contacts. Using Impact of Event Scale-Revised (IES-R) and the Depression, Anxiety and Stress Scale (DASS-21), respectively. Using the IES-R measures PTSD symptoms in survivorship</p>	<p>students) prone for the psychological impact during COVID-19.</p>	<p>methods of dissemination or unbiased knowledge about COVID-19, teaching correct methods of contaminant, ensure availability of resources</p>	<p>Anonymous questionnaires made it difficult to pair respondents. Self-reporting of levels of psychological impacts did not align with objective assessment by mental health professionals. Could not rule out the possibility that some respondents might have been infected with COVID-19.</p>
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				after an event. DASS -21 is a tripartite model of psychology that formulates general distress with distinct characteristics.			
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