5-2022

# Effects of a Global Pandemic on Adolescent Mental Health in Regard to Depression and Anxiety

Katarzyna Niles

# Effects of a Global Pandemic on Adolescent Mental Health in Regard to Depression and Anxiety

by

Katarzyna Niles

A Starred Paper

Submitted to the Graduate Faculty of

St. Cloud State University

in Partial Fulfillment of the Requirements

for the Degree

Master of Science

in Special Education

May, 2022

Starred Paper Committee:
Bradley Kaffar, Chairperson
Marc Markell
William Lepkowski

# Table of Contents

## List of Tables

Table Page

## Chapter 1: Introduction

Mental health has been at the forefront of news, media, and conversations for the last few years. With the COVID-19 pandemic, it has been a daily topic of discussion amongst teachers and parents. Students and adults alike are struggling with a variety of mental health concerns ranging from various types of depression and anxiety disorders that make it difficult to navigate life. Mental health issues are common among students with disabilities or who have experienced traumas. The pandemic has made it even more difficult to navigate daily life, especially with the uncertainties that have become part of the new norm. The two most common mental health concerns among adolescents are depression and generalized anxiety (Racine et al., 2021). The global pandemic has exacerbated the number of students with mental health disorders (Hawes et al., 2021). This means that, as a special education teacher, I will be more likely to encounter a student with mental health concerns than in the past.

After talking with co-workers and mental health professionals that work in my building, a pattern emerged. Everyone I talked with has mentioned that there has been a shift from the past with students experiencing mental health issues. That is to say, many people who were doing well are now struggling. Many people who have been on the border of struggling are now experiencing major struggles. Many people who were majorly struggling are now in dire need of help that may not be available. Unfortunately, based on personal experience from working with students with disabilities mental health support for students is often unavailable. I wanted to see if there is data to back up the claims that I have been hearing.

Not only is this pattern of more mental health challenges very noticeable in my special education setting, but I am also seeing the shift in my own children at home. I have three children, two girls and one boy, all between the ages of 10-15. I have noticed that within my own

family, my kids are struggling with the lack of socialization due to the pandemic. My eldest, who used to be extremely outgoing, has now become very reserved and is self-isolating. My youngest is struggling with emotional regulation and becomes upset much quicker than she did pre-pandemic. My middle child is experiencing panic attacks and massive anxiety that was not seen pre-pandemic. If my kids are affected, then it is likely that others are going to be impacted as well. I suspect other families are experiencing a similar pattern.

As a special education teacher, I had no clue what I was going to walk into when the 2021-2022 school year started. With over 1,500 students in my building and no way to distance them, I panicked about how preventing the spread of COVID this was going to work. I also wondered how our students were going to cope after a year and a half of limited socialization. Their mental health was at the forefront of my concerns. I feared that even more depression and anxiety may make a fast appearance.

**Depression and Anxiety Differences**

The American Psychiatric Association (APA) (2013) defines depression as a common and serious mental health issue that negatively affects the way one feels, thinks, and acts. Depression symptoms can vary from mild to severe. According to the APA (2013), a common feature of the various depression disorders is “the presence of sad, empty, or irritable mood, accompanied by somatic and cognitive changes that significantly affect the individual's capacity to function” (p. 155). Etiology, timing, and the duration of symptoms differ among the various subcategories (APA, 2013).

The APA (2013) points out that while anxiety is a typical reaction to stress, resulting in worrying and anxiousness, an anxiety disorder is an excessive fear or anxiety that can cause people to avoid certain situations that are seen as triggers. Fear and anxiety are both quite

different emotions. Fear is the emotional response to real or imminent dangers. The reaction to fear can vary from fight or flight response to any number of escape behaviors. While anxiety is the anticipation of future threats that could happen. One symptom that anxiety disorders are associated with is panic attacks (APA, 2013). Generalized anxiety disorder (GAD) is categorized by excessive anxiety and worry. The individual finds it difficult to control worry, and this uncontrolled worry affects their everyday life. Symptoms include restlessness, being easily fatigued, difficult concentrating, irritability, muscle tensions, and sleep disturbance (APA, 2013).

Depression and anxiety are a concern for teachers. Rachel Ehmke points out that if the students are experiencing these mental health disorders, they are more likely to avoid attending school, which may be seen as a trigger to their anxiety and/or depression (Ehmke, 2022).

Depression and anxiety affect many people. The prevalence numbers prior to the pandemic were taken from the American Psychiatric Association *Diagnostic and Statistical Manual of Mental Disorders.* According to the APA (2013), females are more likely to experience an anxiety disorder than males. Females are a 2:1 ratio. The APA also points out that 7% of the United States population have a major depressive disorder. The age group with the highest rate is between the ages of 18-29 years old. Again, females are more likely to experience depression than males (APA, 2013). Stony Brook University conducted a study and found that there was an increase in the numbers of generalized anxiety disorders and social anxiety symptoms since the start of COVID-19. Females also had an increase in depression and panic somatic symptoms (Hawes et al., 2021).

**Research Question**

There are two questions that will guide the research in this paper.

- What effect does the COVID pandemic have on adolescent mental health?

- How can we help adolescents who are experiencing mental health concerns from COVID?

**Historical Background**

Hawes et al. (2021) points out that the Coronavirus (COVID) pandemic hit the world at the end of 2019, and the United States (US) put stay-at-home orders in place as early as March of 2020. These stay-at-home orders required most Americans to adjust to a "new normal"; this meant most people were suddenly working, studying, and learning from home. In addition to staying at home, additional challenges happened as people started to lose jobs, mobility was restricted, and isolation was experiencing a steep increase (Hawes et al., 2021).

At the time of this research, the world is still on high alert as COVID continues to mutate. The long-term implications of this ongoing pandemic are still unknown. Research continues to increase the information we are given. Most of the information is coming out of Asia and Europe where the pandemic first started (Hawes et al., 2021).

Coronavirus (COVID-19) is not the first pandemic people have experienced throughout history. Morens et al. (2020) lists some notable pandemics and epidemic diseases people have lived through. In the last 20 years there have been six different pandemics that were caused by the evolution of animal pathogens. These pandemics include SARS, H1N1 swine flu, Chikungunya, and Zika (Morens et al., 2020). Pandemics have dated far back to 430 BCE with the Plague of Athens, which was thought to be the first transregional pandemic. It resulted in approximately 100,000 deaths (Morens et al., 2020).

Most of the recent pandemics did not have as high a death rate as COVID-19 has produced. As of April 10, 2022, the Centers for Disease Control (CDC) listed 982,663 deaths in the United States alone (CDC, 2022). According to the World Health Organization (WHO), as of

April 8, 2022, the COVID-19 pandemic has claimed the lives of 6,170,283 people worldwide (WHO, 2022). Morens et al. (2020) points out that there is one pandemic that had comparable results to COVID-19 with similar precautions. Precautions during the Spanish flu included wearing masks, closing schools, shops, and restaurants; placing restrictions on transportation; mandating social distancing, and banning public gatherings. The Spanish Influenza, in 1918, killed more than 50,000 people and led to additional pandemics in 1957, 1968, and 2009. The Spanish Flu was caused by the H1N1 influenza A virus (Morens et al., 2020).

Morens et al. (2020) states that interestingly, humans are the cause of every pandemic. Most are associated with human crowding/moving, sanitation concerns, water storage, exportation of vector mosquitoes, and human cause of mosquito breeding grounds, such as rubber tires that have pools of standing water in them that helps increase the mosquito population. Domestic animals in villages have also caused pandemics due to the organisms switching hosts (Morens et al., 2020).

**Theoretical Background**

Due to the newness of the COVID Pandemic, long term effects are still unknown. However, some research addressing the effects of a pandemic on mental health has been published within the last year. Many studies attempting to identify the impact of the pandemic were in progress before the pandemic became widespread.

**Importance/Rationale**

I started working with students with special needs in 2000; I have encountered students from every disability category in teaching. When I first started working in schools, I was a paraprofessional working firsthand with students with a variety of unique needs. Working with students with special needs is often challenging because of their unique needs.

When the COVID Pandemic started, schools across the world shut down. Since I was familiar with concerns with mental health, I assumed there would be some major concerns once students and teachers came back into the buildings. I started the 2021-2022 school year with caution. What I experienced in the first month alone included an increase of drug use among students, an increase in disruptive and violent behaviors, many physical fights were breaking out, and a lack of care when it came to educational advancement among students. The regression in Individualized Education Program (IEP) goals became apparent, with an increase in mental health concerns. I was alarmed when a colleague came up to me and said they are seeing an increase in mental health reports. That was when I knew that this topic needed to be strongly addressed. As a parent and special education teacher, I needed to find out more information.

Educators need to be aware of how to help students because mental health is at the top of the list of concerns. What is decreasing is progress on goals, grades, and the chance of students being ready for graduation.

**Definition of Terms**

*Depression: a* common and serious mental health issue that negatively affects the way you feel, think, and act (APA, 2013).

*Depressive Disorders:* the APA describes depressive disorders as disorders with common features include the presence of sad, empty, or irritable mood, accompanied by somatic and cognitive changes that affect a person's ability to function in everyday situations (APA, 2013).

*Anxiety Disorders:* disorders that have symptoms of excessive fear and anxiety. They also relate to behavioral disturbances. The symptoms are excessive and persistent in nature and can affect everyday life. Anxiety disorders include generalized anxiety disorder, social anxiety

disorder (also known as social phobia), selective mutism, panic disorders, separation anxiety disorder, and specific phobias (APA, 2013).

*Anxiety:* it is the anticipation of something that could happen but has a chance of not happening in the future (APA, 2013).

*Fear:* the emotional response to a real or immediate threat that will or could happen (APA, 2013).

*Social Anxiety:* an anxiety where the individual is fearful of a social situation. Avoidance of social situation or interactions is higher due to anxiety and fear of being criticized by others (APA, 2013)

*Generalized Anxiety Disorder (GAD):* an anxiety disorder where symptoms are seen in more days than not for at least six months. The duration, intensity, or frequency of the worry is out of proportion with the actual likelihood that the event will happen. The person with GAD has a challenging time controlling the worry and has at least three of the six anxiety symptoms. Symptoms include restlessness or feeling on edge, easily fatigued, difficulty concentrating, irritability, muscle tension, sleep disturbance. In children, only one symptom must be present (APA, 2013).

*Panic/Somatic Symptoms:* the physical symptoms that a person has when anxiety is present. Symptoms can include pain, weakness, or shortness of breath to the point where major distress or difficulty functioning is present. The symptoms may or may not be correlated to a medical condition, however, the person believes that they are experiencing physical symptoms (Ehlers, 1993).

*Social Isolation:* National Academies of Sciences, Engineering, and Medicine describe social isolation as a “lack of social connections”. Social isolation results in an increase in

loneliness which could lead to other medical and health concerns (National Academies of Sciences, Engineering, and Medicine, 2020).

*Trauma:* is an emotional response to a terrible event like an accident, rape, or natural disaster. Lasting effects of trauma could include shock and/or denial, unpredicted emotions, flashbacks, strained relationships, physical symptoms including headaches and nausea (APA, 2013)

*Telehealth:* also known as telemedicine is a way of getting medical care without an in-person visit to a clinic. It is done online through a virtual meet on a computer, smartphone, or tablet (Human Resources and Services Administration, 2021).

*Panic Attacks:* a fear response present in anxiety disorders. They are not limited to just anxiety disorder, and they can be seen in other mental disorders (APA, 2013).

*Pandemic*: while there is no scientific definition on what classifies as a pandemic, the most specific definition refers to an impressively large epidemic. This usually refers to a disease that occurs within a specific region (Morens et al., 2020).

# Chapter 2: Review of Literature

## Introduction

The purpose of this literature review is to determine if the COVID-19 pandemic influences adolescent mental health. The areas of mental health that will be examined include depression and anxiety. This chapter is organized into two main sections. The first section includes studies that analyze the effects of the COVID-19 pandemic on mental health in relation to anxiety and depression in adolescents. The second section includes studies that examine how to treat mental health in adolescents during a pandemic. Studies within each section will be organized in chronological order starting with the oldest study.

## Effects of Pandemic on Mental Health Studies

With COVID-19 existing almost 2 years at the time of this research, there have been several studies across the globe on how a global pandemic affects mental health among adolescents. Research studies and data vary based on the location of research, and the culture where the research was conducted. Researchers looked at how social isolation affects depression, panic/somatic, generalized anxiety, and social anxiety symptoms. Each article analysis looks at the mental health disability among a certain age group. Later in the chapter, there will be a compilation of articles about how to assist adolescents with mental health effects from COVID-19.

### *Fitzpatrick et al. (2020)*

Fitzpatrick et al. from Harvard University's Department of Psychology noted that due to the rise of mental health concerns among children and caregivers due to the COVID-19 pandemic, there has been an increase and rapid emergence of virtual care options because of stay-at-home orders. Pre-COVID-19, 35% of children who require mental health services

received care through schools, which is why virtual options were essential. Researchers started with the idea of doing research that was:

> largely exploratory in nature, with the ultimate goal of informing which intervention programs, focusing on which problems, might be most appropriate and effective for families during this and future contagious disease outbreaks, as well as other crisis that have similar impacts on family functioning. (Fitzpatrick et al., 2020, p. 1083)

The sample included 133 caregivers of children and adolescents between the ages of 1-19. The caregivers and children/adolescents lived in the same household at least 50% of the time. The caregivers were racially and ethnically diverse across a broad range of household incomes. Caregivers were also broad in age (18-60), and 81% were female. They were asked to answer several questions related to one of their children with the greatest emotional and/or behavior difficulties. The age breakdown of children was as follows: 1-5 years, $N = 48$; 6-12 years, $N = 56$; 13-19 years, $N = 29$. 97. Recruitment of participants happened between April 20, 2020, and July 3, 2020.

Participants completed a Behavior and Feelings Survey (BFS) which is a 12-item rating scale where the caregiver reports the emotional and behavioral difficulties of the child they identified as being most severe in these domains. Items are rated on a scale of 0-4. The Generalized Anxiety Disorder Questionnaire 7-item (GAD-7)) was used to measure anxiety symptoms. The Patient Health Questionnaire 8-item (PHQ-8) was used to measure depressive symptoms. The item related to suicidal ideation was removed since there was no way to provide follow-up care. The Top Problems Assessment (TPA) was adapted to fit the goals of the research. Using these measures, qualitative data was used to determine mental health problems and needs.

The results of the study found that the caregiver's age had a significant correlation with caregiver reporting anxiety and depression. The number of children in the household also had a significant correlation with caregivers reporting internalizing, externalizing and total problems among the child that was identified as having the greatest difficulties.

***Hawes et al. (2021)***

Hawes et al. (2021) looked at the preliminary reports from Asia and Europe that were being presented concerning adolescents and young adults presenting elevated depression and anxiety levels as related to the COVID-19 pandemic. Their hypothesis was stated, "young adults and adolescents may be especially vulnerable to mental health consequences of the COVID-19 pandemic" (Hawes et al., 2021, p. 2). The studies Hawes et al. (2021) did were in New York, which was one of the first areas to be severely affected by the COVID-19 pandemic. Both of their studies started pre-COVID-19 pandemic.

The participants included 451 adolescents and young adults living in Long Island, New York who participated in two longitudinal studies at Stony Brook University. The two studies were the Impact of Puberty on Affect and Neural Development across Adolescence (iPANDA) and the Stony Brook Temperament Study (SBTS). The iPANDA study involved 317 girls. The participants were recruited using a mailing list of families who had a girl in the age range of 8-14 years old. The study was in the middle of the third wave when the COVID pandemic hit. The SBTS study recruited families through commercial mailing lists within 20 miles of Stony Brook University with a 3-year-old child residing with them. Children eligible for the study had no significant medical disorder or developmental disabilities, had a biological parent who could read and write in English. The assessments occurred when the children were 3, 6, 12, 15, and 18

years old. The SBTS study just started the sixth assessment (age 18) when the COVID pandemic hit.

The measures used in the studies include the Children's Depression Inventory (CDI). The CDI is a self-reporting assessment used to assess depression symptoms occurring in children ages 7-17 over the previous 2 weeks. This was administered to all participants. The Screen for Child Anxiety-Related Disorders (SCARED) was used to assess anxiety disorder symptoms in children aged 8-18 years. The SCARED contains 41 items on a 3-point scale. Hawes et al. points out,

> There are 5 subscales that measure different anxiety symptoms that parallel anxiety disorders classified in the DSM, including panic/somatic symptoms, generalized anxiety disorder, separation anxiety, social anxiety, and school phobias. The SCARED has demonstrated adequate psychometric properties in both clinical and non-clinical samples. (2021, p. 2)

The present study only focused on panic/somatic symptoms, generalized anxiety, and social anxiety subscales. After the COVID pandemic started, the assessors added a Pandemic Experiences Survey as a survey to assess changes in life circumstances.

Participants completed the CDI and the SCARED between December 2014 and August 2017 for iPANDA. Participants completed the same assessments for the SBTS between July 2016 and July 2019. All assessments were completed either during a lab visit or at home via an electronic device. The COVID pandemic hit, and the participants completed the COVID-19 CDI, SCARED, and the pandemic experience assessments electronically between March 27, 2020, and May 15, 2020.

The data that Hawes et al. (2021) presented found that regardless of age, psychiatric symptoms increased during the pandemic. These include depression, panic/somatic, generalized anxiety, and social anxiety symptoms. Depression and panic/somatic symptoms had the greatest

increase in females only. The pandemic contributed to an increase in social and generalized anxiety in both males and females. Females were affected more than males in regard to the pandemic. The studies also showed that concerns related to school, distance learning, quality of online classes, and juggling responsibilities showed an increase in depression. Confinement to the home, experiencing 'cabin fever', and lack of socialization increased generalized anxiety. However, home confinement was associated with a decrease in social anxiety symptoms.

Table 1 below shows depression and anxiety symptoms before and during the COVID-19 pandemic as reported on the CDI and the SCARED.

**Table 1**

*CDI and SCARED Results* (M = Mean, S.D. = Standard Deviation)

| | Pre-COVID-19 *M* (S.D) | COVID-19 *M* (S.D.) |
|---|---|---|
| CDI | 5.93 (5.70) | 9.61 (7.74) |
| Females | 6.49 (9.22) | 10.76 (8.23) |
| Males | 4.68 (4.09) | 7.05 (5.78) |
| SCARED | | |
| Panic/Somatic symptoms | 4.77 (4.29) | 4.96 (5.03) |
| Females | 5.27 (4.68) | 5.91 (5.41) |
| Males | 3.64 (3.01) | 2.86 (3.15) |
| Generalized Anxiety | 5.62 (4.38) | 7.62 (4.92 |
| Social Anxiety | 4.83 (3.57) | 5.43 (4.00) |

***Spencer et al. (2021)***

Spencer, with seventeen additional researchers, wanted to see what the effects of the COVID-19 pandemic had on children in urban, racial, and ethnic minority school-aged children. They wanted to look at the mental health symptoms and social risk factors that resulted from the pandemic compared to the number pre-COVID-19. Spencer et al. (2021) points out the concern

for “racial and ethnic minority youth, who are likely to be disproportionately impacted by pandemic-related stressors and psychosocial problems” (p. 2).

There was a final total of 1,051 children eligible, from 913 unique households. Of those eligible only 168 answered the questionnaire items. Male students made up a greater portion of the study. The researchers did a cohort study that consisted of students who were already screened for emotional and behavior symptoms and social risks. The screening for the children was done “as part of routine care at an urban, safety-net, hospital-based pediatric primary care clinic in the 6 months before pandemic onset” (Spencer et al., 2021, p. 3). The children were between the ages of 5-11 years of age. They were screened at their pre-pandemic well visit. The researchers contacted the legal guardians after the visit to re-administer the same mental health and social risk screening, while also adding COVID-specific variables. They did this three times at three-month intervals. They analyzed data collected pre-pandemic (from September 2019 to February 2020) to the mid-pandemic assessment done between August 2020 and January 2021.

The Pediatric Symptom Checklist (PSC-17) was used at pre-COVID well-visits. Children did not have their results documented if their caregiver could not understand informed consent in English, Spanish, or Haitian Creole. They were also excluded if their sibling had already participated in the study. The measures used included the Pediatric Symptoms Checklist (PSC-17) for emotional and behavioral symptoms. This checklist is available in 6 different languages and looks at 17 child specific symptoms on a 3-point scale. Higher scores signal more severe symptoms of mental health risk. Social Risks were assessed using the THRIVE screening tool, which is a questionnaire that assesses the families’ social risks and unmet needs. THRIVE assesses food insecurity screener. THRIVE also includes “screeners for housing instability, unemployment, medication affordability, transportation to medical appointments, educational

goals, and the ability to pay bills and meet family caregiving needs" (Spencer et al., 2021, pp. 3-4). They also used the Patient Health Questionnaire-2 (PHQ-2) and General Anxiety Disorder-2 (GAD-2) to assess the caregiver's mental health status. Researchers also looked at additional mid-pandemic variables (screen time, classwork completion rates, exposure to COVID-19, and knowing someone who contracted COVID) and Sociodemographic variables such as child's age, gender, race, ethnicity, health insurance status, and caregiver's language.

Paired sample t-tests were used to analyze the data obtained between all the assessments. Higher levels of emotional and behavioral symptoms were present mid-pandemic vs. Pre-pandemic. The mean of the PSC-17 was significantly higher mid-pandemic indicating worse mental health. Children with positive pre-pandemic PSC-17 scores still had positive mid-pandemic scores (85%). However, most children (61%) with positive mid-pandemic scores on the PSC-17 had screened negative before the pandemic. Table 2 shows the results of the PSC-17.

**Table 2**

*PSC-17 Results*

| Child emotional and behavioral symptoms | Pre-pandemic | Mid-pandemic | Difference testing | Cohen's *d* |
|---|---|---|---|---|
| PSC-17 total problems<br>~Mean Score (SD)<br>~% positive | 5.59 (5.8)<br>8 | 8.04 (6.41)<br>18 | t(152)=6.17<br>z=2.64 | 0.50 |
| PSC-17<br>Internalizing Problems ~Mean Score (SD)<br>~% positive | 1.06 (1.56)<br>5 | 2.18 (2.20)<br>18 | t(161)=6.92<br>z=3.72 | 0.52 |
| PSC-17 Externalizing Problems<br>~Mean Score (SD)<br>~% positive | 1.85 (2.39)<br>7 | 2.58 (2.69)<br>10 | t(160)=3.99<br>z=0.81 | 0.35 |
| PSC-17 Attention Problems<br>~Mean Score (SD)<br>~% positive | 2.68 (2.78)<br>14 | 3.23 (2.64)<br>12 | t(162)=3.34<br>z=-0.63 | 0.37 |
| THRIVE total scores<br>~ Mean (SD) | 0.97 (1.60) | 2.12 (2.12) | t(100)=6.49 | 0.58 |

The THRIVE results for social risk factors reported by caregivers all increased mid-pandemic. All THRIVE scores, with the exception of difficulties of transportation and difficulties affording medications, increased significantly.

**Table 3**

*THRIVE Results*

| Specific Social Risks | % Positive Pre-pandemic | % Positive Mid-pandemic | z-score |
|---|---|---|---|
| Housing Difficulties | 3 | 12 | 2.81** |
| Food Insecurities | 16 | 50 | 6.74*** |
| Difficulties with Transportation | 12 | 14 | 0.39 |
| Difficulties Affording Medications | 6 | 6 | 1.05 |
| Difficulties paying bills | 16 | 38 | 4.00*** |
| Difficulties with dependent care | 1 | 10 | 3.27** |
| Unemployment | 3 | 10 | 2.55* |
| Interest in more education | 20 | 39 | 3.40*** |

*p < .05, **p < .01, ***p < .001

This study's findings show an increase in depression and anxiety, along with social risks during the COVID-19 pandemic among children in the racial and ethnic minority groups. There is an increase in screen time, decrease in school assignment completion, and an increase in caregiver depression which has a correlation with an increase in mental health problems among school aged children.

The implications of this study find an increase in mental health needs among students, however there is not an increase in mental health services. Spencer et al. (2021) points out, "the impact of the COVID-19 pandemic on child mental health may not be steady over time, and further longitudinal data will be required to understand the long-term implications" (p. 10). Since the COVID-19 pandemic is still not over, the data will change over time.

***Buckner et al. (2021)***

Buckner et al. (2021) wanted to compare data from the month pre-COVID-19 pandemic to see if there was an increase in anxiety and depression. They wanted to prove that pre-crisis trait anxiety and Generalized Anxiety Disorder (GAD) are related to crisis-related depression and

anxiety. They also compared pre-pandemic social anxiety as a predictor of greater anxiety, depression and COVID- related worry because of stay-at-home orders.

Participants in the study were pulled from a large state university in Louisiana from February 16, 2020 to March 13, 2020. Data collection for the study occurred until May 15, 2020 when the first phase of re-opening the state of Louisiana occurred. There were a total of 120 participants with a mean age of 19.8.

There was a total of six measures used to collect data. The measures used consisted of *Demographics and COVID-19 Screening*. In this measure, participants reported on sex, age, and ethnicity. There were six questions related to COVID-19 exposure, diagnosis, and international travel. The *Social Interaction Scale* measured social anxiety using 20 questions on a 5-point scale. The *Depression Anxiety Stress Scale* (DASS-21) was used to measure depression and anxiety. It consists of 7 subscales that contain seven items each. The *COVID-19 Daily Activity Disruptions* was created to determine changes in health behavior because of COVID-19. Questions focused on hygiene, sleeping, social connections, eating, motivation, keeping a routine, exercising, and fatigue. Participants were asked to rate what is normal for them compared to after the COVID-19 pandemic hit. *COVID-19 Worry Index* had 15 items related to measuring worrying because of COVID-19. Questions were given a scale of 1(not at all) to 7 (great deal). Items included if participants were worried about losing connections with family/friends and their ability to handle quarantine. The last measure was the *Infrequency Scale* (IS) which was used to exclude participants. Participants who supported three or more items were excluded from the study.

The results of the measures showed that depression had a statistically significant increase. Buckner et al. (2021) created a hierarchical regression analysis. In the first model, anxiety was

the criterion variable entered. This accounted for 45.8% of the variance in anxiety during a stay-at-home order. Depression was no longer significantly related to anxiety in this model. In the second model, depression was the criterion during the stay-at-home order. As a result, the variables in step 1 accounted for 50.4% of the variance in depression. Social anxiety accounted for an additional 4.9%. The third model had COVID-19 related worry as the criterion model. In this model, depression and anxiety were no longer statistically significant.

The researchers point out,

> Social anxiety was statistically significantly, positively related to trouble keeping up with daily hygiene, sleeping, keeping up in contact with family and friends, feeling motivated, keeping a daily routine, and exercising, as well as eating unhealthier and feeling more fatigue. (Buckner et al., 2021, p. 3)

Pre-Stay-At-Home Order anxiety was also related to all items. Depression was related to all except for healthy eating. Results of the study show that depression increased from the month prior to stay-at-home orders to the month after the order was put in place. Trait or social anxiety did not increase in the same period.

The limitations of the study included that most participants included white female young adults. 76.7% of all participants were white. It would be interesting to see if minority or male young adult students were affected the same way. Due to how long the pandemic has been going on, it would be interesting what the findings were one year after the onset of COVID-19.

***Evans et al. (2021)***

Evans et al. (2021) researched the effects of the COVID-19 lock down on 254 college students. They wanted to know the effects a lockdown has on adolescent mental health by measuring sleep quality, diurnal preference, depression, anxiety symptoms, wellbeing and loneliness, and alcohol use. The study was performed in the United Kingdom (UK) with baseline

data collected in the autumn of 2019 and subsequent data collected in April/May of 2020. Researchers looked at sleep as a link to mental health.

The participants were college students in the United Kingdom. 254 students participated in the study, with 219 being female, 32 being male and three preferred not to say. The study started at a baseline of 302 participants, but 48 did not complete the follow-up survey. The participants were between the ages of 18-31 years old, with a mean age of 19.76. All were first- or second-year undergraduate psychology students. One hundred and fifty-two students were first year students, while 112 were second year students.

There were a variety of measures used to collect data. AUDIT-C was used to measure alcohol use. Questions focused on frequency and amount consumed. Diurnal Preference was measured using the 5-question *Reduced Morningness-Eveningness Questionnaire* (rMEQ). Participants rate their response on a four-point scale. Lower scores correlate to great evening preference. Sleep quality was measured using the *Pittsburgh Sleep Quality Index* (PSQI). This is a 19-item assessment that contains seven components of sleep in relation to quality, latency, duration, efficiency, disturbance, sleeping medications, and daytime dysfunction. Anxiety and depression symptoms were measured using the *Hospital Anxiety and Depression Scale* (HADS). Participants answer a variety of questions in relation to moods from the previous week using a four-point scale. Mental wellbeing was accessed using the short seven item *Warwick Edinburgh Mental Well-being Scale* (WEMWBS). A higher score on this assessment equals better mental wellbeing. The final assessment used was the *De Jong Gierveld Loneliness Scale* used to measure loneliness. It was a short six question assessment where a higher score means higher loneliness.

Results at baseline vs. lockdown showed a significant increase in depression at lockdown, significant decrease in wellbeing at lock-down, a significant decrease in alcohol use at lock-down. There was a significant change in diurnal preference where the shift was towards the evening. The study did not report a significant change in anxiety, loneliness, or sleep quality. Evan et al. (2021) points out that there was a correlation between an increase in depression with an increase in anxiety, reduced wellbeing, and reduced sleep quality at lockdown compared to the baseline.

Table 4 shows the subject comparisons between the baseline and lockdown.

**Table 4**

*Evans et al. Data*

| Variable | N | Baseline (M ± SD) | Lockdown (M ± SD) |
|---|---|---|---|
| Anxiety | 251 | 9.35± 4.28 | 9.42± 4.47 |
| Depression | 259 | 4.33± 3.26 | 6.31± 3.74 |
| Alcohol Use | 246 | 4.53± 2.85 | 3.96± 2.58 |
| Wellbeing | 251 | 23.04±4.96 | 21.12±4.87 |
| Loneliness | 251 | 4.23±1.10 | 4.45±1.06 |
| Sleep Quality | 238 | 6.58±3.35 | 6.60±3.16 |
| Diurnal Preference | 249 | 12.03±3.26 | 11.62±3.47 |

Note: Mean and Standard Deviation for time point.

The authors pointed out that the decrease in alcohol use may be related to the decrease in socialization due to the lockdown. The theory is that students use alcohol in social situations instead of as a coping mechanism. There is no research in this theory during this study to prove that idea. Another drawback was the research for this study was done on primarily white female psychology students from a single university. Future studies need to be done to look at a variety of student backgrounds to get more accurate results.

***Arad et al. (2021)***

Arad et al. (2021) measured the severity of social anxiety during the COVID-19 lockdown on individuals with high scores on the Liebowitz Social Anxiety Scale (LSAS). The scale was completed during the beginning of the fall and spring semesters of the 2019-2020 school year. They took the data collected and compared it to data collected from the 2016-2019 school years during parallel time points within the academic year. They expected a reduction in social anxiety symptoms from fall to spring in normal academic school years. However, the researchers expected symptoms of social anxiety to remain high and unchanged during the fall and spring of the 2019-2020 academic year.

The measures used included the Liebowitz Social Anxiety Scale (LSAS), which is a self-report questionnaire with 24 social situations with two subscales each on a 0-3 scale. Each social situation measures the level of fear and the level of avoidance. During the spring, the researchers used the Patient Health Questionnaire (PHQ-9) which is a nine item self-report questionnaire ranging from 0-27. The higher the score the greater the depression. The researchers had data from the Patient Health Questionnaire for all the socially distanced groups and for 35 out of 44 participants in the non-socially distanced group.

The study was done at Tel Aviv University and consisted of 99 undergraduate students. Inclusion criteria for the study included the following:

- A high score of over 50 on the LSAS in the fall of the school year.
- An additional LSAS score collected in the spring semester of the same year.

The study looked at 55 participants in the 2019-2020 school year (socially distanced group) and compared it to data from 44 participants in previous years (non-socially distanced group). Participants who scored high on the LSAS in the fall were contacted by the committee in the

spring to complete another LSAS, along with a depression questionnaire. Participants were compensated with either course credits or payment. The study was approved by the Tel Aviv University Ethics Committee.

As shown in Table 5, Arad et al. (2021) found no significant difference between the LSAS scores from the socially anxious participants in the socially distanced group and the non-socially distanced group. The socially distanced group was a bit older on average. The socially distanced group had higher PHQ-9 scores versus the non-socially distanced group. The non-socially distanced group had reduced LSAS scores between the two-time intervals, while there was no difference in scores for the socially distanced group. There was no significant difference between the two groups during Time 1, but there was a significant difference between both groups at Time 2. The same was seen for the PHQ-9.

Table 5 below shows the data collected regarding social anxiety.

**Table 5**

*Social Anxiety Data*

| Variable | Social Distancing Group | | Non-Socially Distanced Group | |
|---|---|---|---|---|
| | M | SD | M | SD |
| Age (years) | 22.62 | 2.36 | 21.57 | 1.90 |
| Gender Ratio (W:M) | 49:6 | | 35:9 | |
| PHQ-9 (Time 2) | 11.59 | 6.63 | 6.89 | 3.61 |
| LSAS Total Score- Time 1 | 69.6 | 13.13 | 67.36 | 10.66 |
| LSAS Total Score- Time 2 | 70.62 | 18.65 | 53.51 | 15.83 |
| LSAS Fear Score- Time 1 | 36.36 | 7.73 | 34.16 | 7.96 |
| LSAS Fear Score- Time 2 | 37.86 | 10.29 | 27.04 | 8.78 |
| LSAS Avoidance Score- Time 1 | 33.24 | 7.22 | 32.82 | 6.06 |
| LSAS Avoidance Scores- Time 2 | 33.11 | 10.90 | 26.47 | 8.91 |

The researchers did note some limitations of the study. The COVID-19 pandemic was one limitation since the non-socially distanced group was not affected by a global pandemic. Since none of the participants experienced any real adverse effects of the pandemic, which could change data. None of the participants were diagnosed with COVID-19 and over 98% were not affected economically by the pandemic. The LSAS also offered limited data for underlying reasons for fear and avoidance of social interaction. Since data was collected at the beginning of COVID-19 (Spring 2019), the data could be different if done after almost 2 years of COVID-19 since it affected more people.

## Treatments, Therapies, and Interventions Available

With the rise in mental health concerns, there have been a number of treatments that have shown success among adolescents. Treatments vary from traditional therapies, cognitive therapy, varieties of art therapy, and accessing mental health professionals through telehealth. The following articles look at a variety of treatment options and their success rate during the COVID-19 pandemic.

### *Warnock-Parkes et al. (2020)*

Warnock-Parkes et al. (2020) look at and provide adaptations to the delivery of evidence-based psychological therapies delivered virtually. They point out how these methods benefit the population during a pandemic and, especially, those with social anxiety disorder (SAD). The researchers point out,

> remote delivery may help overcome some specific barriers to help-seeking, such as anxiety about traveling to clinics, the stigma of being seen in a mental health unit, and the cost and time of traveling to appointments. For patients with social anxiety there may be the added appeal of not having to start therapy with an in-person meeting in a strange environment. (Warnock-Parkes et al., 2020, p. 1)

Warnock-Parkes et al. (2020) explain how to deliver Cognitive Therapy for Social Anxiety Disorder (CT-SAD) virtually even though the best practice for delivery of this therapy is done in-person through exposure therapy, group cognitive behavior therapy, interpersonal psychotherapy, psychodynamic psychotherapy, selective serotonin re-uptake inhibitors, medical-based treatment, pill placebo, and psychological placebo.

Warnock-Parkes et al. (2020) have a number of recommendations on how to deliver these therapies. They recommend doing all sessions via video conference since a phone conference can encourage avoidance of showing oneself to others. CT-SAD is delivered in up to 14 weekly sessions. They advise continuing to conduct in-session behavior experiments which can happen in various settings. Discussion of a few practical issues is also advised. For instance, concerns over privacy in the patient's home may be a concern, especially for someone who is already hyper aware of what others may think about them. It is recommended that both parties have a technical set-up, minimized distractions, and screen sharing capabilities to do virtual therapy sessions. It is also recommended that the patient hide their self-view since it can increase their self-consciousness due to their ability to see themselves on the screen.

It is recommended that those sessions are recorded with patient consent. This allows the therapist and patient to watch recordings of experiments together. The therapist can then lead the discussion with the patient about what their inner critic sees. Recordings allow for a discussion before, during, and after watching the footage. Therapists need to be cautious regarding anxiety being high and sessions stopping abruptly so frequent check-ins for anxiety with the patient are essential.

The methodology that the researchers used on how to deliver effective therapies during a pandemic has proven that these virtual methods can be implemented even after COVID-19 is

done. Careful consideration needs to be put into effect prior to delivery since not every patient will benefit from virtual therapy delivery.

***Malboeuf-Hurtubise et al. (2021)***

Malboeuf-Hurtubise et al. (2021) conducted a study on the effects of emotional-based directed drawing intervention and a mandala drawing intervention on mental health in elementary aged students during the COVID-19 pandemic. Art has been shown to be effective in facilitating and encouraging self-expression, making the patient more aware of emotions by using a replacement means of communication.

The study was done in two classrooms of 4th and 5th graders in the Eastern Townships region in Quebec, Canada. There was a total of 22 students with a median age of 11.3. One classroom of 5th graders ($N$ = 8) was given the mandala drawing intervention while another classroom of 4th and 5th grade students ($N$ = 14) was given the emotion-based directed drawing intervention. The study was done simultaneously in May and June of 2020 following a 6-week confinement period. Both interventions lasted a total of 5 weeks with one 45-minute session per week. The delivery method was a password protected video conference with each classroom.

Mental health symptoms were assessed one week prior to the intervention and one week after the intervention using the *Behavior Assessment Scale for Children–3rd Edition* (BASC III). The subscales looked at anxiety, depression, inattention, and hyperactivity. Participants completed only certain sections of the assessment. Participants also completed seven items from the Mindful Attention Awareness Scale for Children. The researchers used paired t-tests to measure pre-to-post intervention changes in scores.

It is important to note that there was a decrease in scores among both groups from the pre-intervention to post-intervention. Regardless of the type of intervention, art therapy is effective in treating most mental health concerns. Table 6 shows the data for pre- to post-therapy numbers.

**Table 6**

*Art Therapy Effects Data*

| Dependent Variable | Mandala Group | | Emotion-Based Drawing Group | |
|---|---|---|---|---|
| | Pre-Test (SD) | Post-Test (SD) | Pre-Test (SD) | Post-Test (SD) |
| Anxiety | 3.25 (2.05) | 2.87 (0.83) | 3.71 (1.48) | 3.5 (1.70) |
| Depression | 2.62 (1.84) | 2.62 (1.50) | 2.46 (1.71) | 2.07 (1.49) |
| Inattention | 1.75 (1.83) | 2.12 (1.24) | 1.38 (1.32) | 1.23 (1.23) |
| Hyperactivity | 1.37 (1.4) | 2.00 (1.30) | 2.21 (1.25) | 1.78 (1.57) |
| Mindfulness | 2.30 (0.81) | 2.03 (0.77) | 2.27 (0.83) | 2.04 (0.85) |

Looking at the data, it appears that both interventions of art therapy are viable options for children with an increase in mental health concerns in helping alleviate symptoms. While there was a small group of students who participated in this study, caution needs to be used when making predictions for larger groups of students. These interventions are a straightforward way to incorporate mental health interventions and both methods need minimal training to the teacher or adult providing these interventions.

***Moorman (2022)***

Leslie Moorman, the Chief Executive Officer and founder of Cooperative Counseling Services (CCS) in New Jersey, shared her company's experience with telehealth services during the COVID-19 pandemic. The privately owned mental health care provider services children and adolescents through a wide variety of services in two urban clinic settings. Ninety-eight percent

of the patients CCS services receive Medicaid and are living at or below the poverty line. More than half of the families have had Child Protection and Permanency involvement. Due to the age of the population of CCS services, they emphasize the importance of family engagement and family therapy along with individual therapy for their patients.

Before COVID-19, CCS did not provide telehealth services due to the restrictions that were in place regarding telehealth before the pandemic hit. Once COVID-19 hit, CCS was able to provide telehealth services due to the governor's orders easing restrictions. CCS compiled attendance data, collected satisfaction surveys and reports regarding telehealth from patients and clinicians. Graduate school interns interviewed clients 6 months after telehealth was initiated. In total, 50 calls were completed. All 50 patients indicated satisfaction. 16% of the patients were looking forward to returning in-person. 42% expressed that they preferred telehealth due to a variety of reasons. Reasons included health concerns, travel, family obligations (taking care of siblings, cooking dinner), and more time for homework. When the interviews were complete, data was collected from 40 clinicians and more than 60 families.

Psychiatric teams reported mixed feelings regarding telehealth. Concerns included the difficulty of reading nonverbal cues in patients, body language, eye contact, and facial expressions. It was harder to triage and determine the needs for psychiatric screenings virtually. Some positives were also reported. The team reported that observing clients in their own environments was a positive result. Clinicians also reported that clients who struggled with school phobia, anxiety, and refusal were doing much better since they were not required to attend school in a building. This also resulted in caretakers minimizing those concerns since in-person school was on hold.

Clinical teams that deal with intake evaluations, developing and implementing plans also reported some positives and concerns related to telehealth. Adolescents seemed to be in their comfort zone and were more engaged in sessions through telehealth, which was seen as a positive. While some were shy on camera, some did open-up more through the messaging feature on telehealth. Teens were more open about traumatic history and exploring sexual identity issues more freely.

There was a drawback in engaging children under the age of 10 through telehealth. The clinicians were able to see more of the behaviors exhibited at home through telehealth, which they did not see in clinic. Behaviors include the "inability to control their anger, an increase in frequency and duration of temper tantrums, lack of frustration tolerance, and oppositional defiance" (Moorman, 2022, p. 13). Across the board clinicians say there was an increase in anxiety and depression.

Data collected by CCS showed an increase in attendance during telehealth. The average attendance rate from January 2019 to September 2019 was 74%. That increased in months with only telehealth services to 89% with fewer cancellations due to an increase in flexibility.

Telehealth is a viable option for adolescents. Teens are used to technology and are more willing to open up through this platform. However, there were drawbacks to young children who relied on an adult to help them log on. Privacy was listed as a disadvantage due to how many family members live in a home.

***Guzick et al. (2022)***

Guzick et al. (2022) noticed that there was an increase in mental health struggles among the population that was related to COVID-19 distress. They wanted to focus on research based, evidence driven treatments to better help adolescents and youth between the ages of five and

thirteen years of age. Researchers wanted to look at parent reported assessments into anxiety, depression, stress, anger, family relationships and Covid-19 related distress to determine if parent-led Cognitive-Behavioral Therapy (CBT) treatments could be successful.

From July 2020 to May 2021, researchers advertised through multimedia platforms the Coping with COVID program in Houston, Texas, and surrounding areas. Participants included caregivers of youth between the ages of 5 and 13. The children criterion was a struggle with emotional and behavioral concerns such as anxiety, stress, sadness, loneliness due to the COVID-19 pandemic. Severe developmental and intellectual disabilities or severe psychological distress were disqualifiers for the study. Participant's parents/caregivers were asked about a history of autism spectrum disorder, bipolar disorder, psychotic disorder, conduct disorder, or oppositional defiance disorder diagnosis. If participants had a history of any of the previous disorder diagnosis, they were admitted on a case-by-case basis depending on the severity of the disorder.

The parent-led CBT was done in six weekly sessions that were done through videoconferencing. Sessions were done based on Unified Protocol for Transdiagnostic Treatment of Emotional Disorders (UP) for children (UP-C) and adolescents (UP-A). Each of the six sessions focused on the various CBT exercises that were led by the parents through HIPAA approved video conferencing. The sessions were provided by doctorate students in school for counseling or school psychology who specialize in children or adolescents. There was weekly licensed supervision for consultation.

There were 6 measures used to determine progress. The first was the Spence Children's Anxiety Scale to assess anxiety in children from age 7 to 17. The Patient-reported Outcomes Measurement Information System (PROMIS) parent-proxy questionnaire was created to track

progress on the clinical side. The questionnaire focused on depression symptoms, anger, stress, and family relationships. The COVID-Thoughts and Behavioral Symptoms Scale (COV-TaBS) was used to determine a child's COVID-related stress pre and post treatment sessions. The COVID-19 Exposure and Impacts Questionnaire (CEIQ) was used to document COVID related events and emotional reactions of the child. The Clinical Global Impressions-Improvement Scale (CGI-I) was used after each session to determine improvement. The last assessment was labeled Satisfaction and was specifically developed for this study to determine the satisfaction of the program.

One hundred and two parent-child dyads completed the treatments with the median age of children at 8.5 years. Most parents reported anxiety as the most common concern. Other concerns included anger, stress, and sadness. Most participants identified as white with an average income of at least $80,000. 97% of the respondents reported social distancing, school closures, and social impacts as the most common COVID-19 impacts. 89% reported feeling bad or upset as a result. 85% reported fear and worries because of COVID-19.

The study showed significant improvement in children across all areas of treatment. Most were in the medium range of improvement based on Cohen's recommended size interpretation. COV-TaBS showed a large improvement. The PROMIS-Family Relationships showed a small improvement. One positive that was not accounted for is that parents reported learning new parenting skills (76%). 87% of parents were satisfied with the services they received and 94% would recommend these services to others.

Since COVID-19 has increased the amount of youth and adolescents impacted by mental health disorders, mental health care professionals have had to be creative in getting those affected with the supports and services patients need. While this study helps parents learn new

skills in helping their children, it relies on parental interpretation and reporting on if their children are benefiting from the services instead of a mental health professional interpreting what they are seeing. There are limitations of what can be seen through a virtual visit and mental health professionals can miss signals because of not being in person.

**Table 7**

*Summary of Chapter 2 Findings*

| Authors | Study Design | Participants | Procedure | Findings |
|---|---|---|---|---|
| Fitzpatrick, Carson, Weisz (2020) | Quantitative ~Thematic analysis to qualitative data | 133 Caregivers of children and adolescents between 1-19 years of age across a broad range of ethnicities and socio-economic areas. | Caregivers completed several measures related to their dependents in relation to mental health concerns. Measures included the Behavior and Feelings Survey (BFS), the Generalized Anxiety Disorder 7-Item scale, and the Patient Health Questionnaire 8-Item. | Caregiver's age had a significant correlation with caregiver anxiety and depression. The number of children in caregivers' care also had a significant correlation with caregivers reported internalizing, externalizing and total problems among the child identified as having the greatest difficulties. |
| Hawes, Szenczy, Klein, Hajcek, Nelson (2021) | Quantitative, ~longitudinal investigations ~Causal-Comparative | 451 adolescents who participated | Depression and anxiety symptoms were accessed in children from 2014 to 2019. Once COVID-19 surfaced, symptoms were re-accessed between March 27, 2020, to May 15, 2020. | Adolescents, particularly females, increased depression, and all 3 types of anxiety symptoms during the early phase of COVID-19 in the US. 60% of the females met the cut-off for at least one disorder during COVID-19. |
| Spencer, Oblath, Dayal, Loubeau, Lejeune, Sikov, Savage, Posse, Jain, Zolli, Baul, Ladino, Ji, Kabrt, Mousad, Rabin, Murphy, Garg (2021) | Quantitative ~Paired sample t-tests for pre- and mid-pandemic PSC-17 scores. ~Two-sample test ~Cohen's d used to compute effective size. | 168 caregivers of children 5-11 years-olds with higher levels of emotional and behavioral symptoms. | Cohort study from September 2019 to January 2021. Areas studied included measuring emotional and behavioral symptoms and social risks. Mid-pandemic stressors were also accessed. | Children had significantly higher levels of emotional and behavioral symptoms mid-pandemic vs. Pre-pandemic. Depression and anxiety scores were higher mid-pandemic indicating a clinical concern. |

**Table 7** (continued)

| | | | | |
|---|---|---|---|---|
| Buckner, Abarno, Lewis, Zvolenski, Garey (2021) | Quantitative, ~Paired Sample t-tests, ~Causal-Comparative ~Regression analysis ~ Longitudinal study | 120 university students completed baseline data through a self-reporting measure. Students had a mean age of 19.8. Students then provided a follow-up survey. | Students completed the Social Interaction Anxiety Scale (SIAS), Depression Anxiety Stress Scale (DASS-21), COVID-19 Daily Activity Disruptions, Covid-19 Worry Index, and Infrequency Scale. | Tests showed no change in social anxiety or trait anxiety during the stay-at-home orders. There was a statistically significant increase in depression. Pre-pandemic trait anxiety, social anxiety, and depression were predictors of anxiety and depression during stay-at-home orders. Emotional distress, especially among individuals with trait anxiety, also increased during the stay-at-home order. |
| Evans, Alkan, Bhangoo, Tenenbaum, Ng-Knight (2021) | Quantitative ~Longitudinal Study ~Causal-Comparative ~ANOVA | 254 undergraduate students in the UK. | Self-report data was collected during the fall of 2019 and in April/May of 2020. The data was collecting sleep quality, depression and anxiety symptoms, diurnal preference, wellbeing, loneliness, and alcohol use. | There was a significant rise in depression symptoms and a reduction in wellbeing during the lockdown. Over one third of the sample could be classified as clinically depressed at lockdown compared to 15% at baseline. Sleep quality was not affected as a whole, but there was a correlation between depression and worsened sleep quality. There was a shift to diurnal preference. Most preferred the nighttime. |
| Arad, Shamai-Leshem, Bar-Haim (2021) | Quantitative ~ANOVA ~T-test with LSAS total score of independent samples as the dependent variable. | 99 first-year students at Tel Aviv University. | Participants were asked to fill out the Liebowitz Social Anxiety Scale (LSAS). Data was collected from a socially distanced group during the fall of the 2019-2020 academic year. Then it was compared to non-socially distanced groups from previous years (2016-2019). Students who scored high in the fall were asked to retake the scale in the spring of 2020, along with a depression questionnaire. | Social Anxiety decreased in socially anxious students from the fall to the spring in the years prior to the pandemic. During the 2019-2020 school year, social anxiety levels remained high. Results show that decreased incidents of social interactions may play a part in the maintaining of social anxiety. |

**Table 7** (continued)

| | | | | |
|---|---|---|---|---|
| Warnock-Parkes, Wild, Thew, Kerr, Grey, Stott, Ehlers, Clard (2020) | Qualitative Data | | The article did a breakdown on best practice methods of how to treat social anxiety disorder through modifications to current cognitive therapy practices. | |
| Malboeuf-Hurtubise, Léger-Goodes, Mageau, Taylor, Herba, Chadi, Lefrançois (2021) | Quantitative<br>~ ANCOVAs<br>~ Paired T-tests | 22 students in 4th and 5th grade in an Eastern Townships region in Quebec, Canada. | Students were placed in one of 2 art groups to access if art therapy was effective in minimizing mental health symptoms. Mental health symptoms were accessed one week prior to the intervention and one week after the intervention using the Behavior Assessment Scale for Children- 3rd Edition (BASC III). The subscales looked at anxiety, depression, inattention, and hyperactivity. Participants completed only certain sections of the assessment. | Both art intervention therapy (mandala drawing and emotion-based directed drawing) are viable options for children with an increase in mental health concerns in helping alleviate symptoms. There was a decrease in scores among both groups from the pre-intervention to post-intervention. |
| Moorman (2022) | Qualitative Data<br>~Informal satisfaction questionnaires | 40 clinicians, 60 families | Practice related data was collected through attendance data and satisfaction interviews with families and clinicians who used telehealth for the first time due to COVID-19 lock down orders. | During telehealth, attendance data increased from 74% in the first three quarter of 2019 to 89% when telehealth was implemented. 16% of the patients were looking forward to returning in-person. 42% expressed that they preferred telehealth due to a variety of reasons. |

**Table 7** (continued)

| | | | | |
|---|---|---|---|---|
| Guzick, Leong, Dickinson, Schneider, Zopatti, Manis, Meinert, Bart, Perez, Campo, Weinzimmer, Cepeda, Mathai, Shah, Goodman, Salloum, Kennedy, Ehrenreich-May, Storch (2022) | Quantitative ~t-tests | 129 parent-child dyads-initiated treatment, 102 completed the treatment. | Six measures were used. They included Spence Children's Anxiety Scale, Patient-reported Outcomes Measurement Information System (PROMIS), COVID-Thoughts and Behavioral Symptoms Scale (COV-TaBS), COVID-19 Exposure and Impacts Questionnaire (CEIQ),The Clinical Golbal Impressions-Improvement Scale (CGI-I), and Satisfaction. Parents led CBT sessions for their children with a variety of mental health concerns as a result of COVID-19 with the assistance of doctorate students and licensed professions. | The study showed an improvement in mental health symptoms across all levels and assessments. Overall, caregivers/parents were satisfied with the services and how their children reacted to them. |

# Chapter 3: Conclusions and Recommendations

The purpose of this research was to determine whether a global pandemic influenced adolescent mental health in relation to depression and anxiety. If there was an increase, I wanted to find some strategies to help adolescents cope with the increase. Chapter 1 included background information on the topic and reasoning for the research. Chapter 2 was a review of research literature. In this chapter, I will point out my findings, recommendations, and implications from research.

## Conclusions

I reviewed a total of ten studies related to the effects of a COVID-19 pandemic on adolescent mental health. Six of these studies were performed on willing participants to determine if there was an increase in depression and anxiety. These studies included Hawes et al. (2021); Spencer et al. (2021); Buckner et al. (2021); Evans et al. (2021); and Arad et al. (2021).

Then I looked at an additional four studies to determine effective ways to assist those dealing with mental health concerns as a result of the pandemic. The studies examined included Fitzpatrick et al. (2021); Warnock-Parkes et al. (2020); Malboeuf-Hurtubise et al. (2021); Moorman (2021); and Guzick et al. (2022).

Eight of the 10 studies used some sort of anxiety and depression measures to determine data. The most common assessment used was the Patient Health Questionnaire (PHQ-8), which was used by three researchers (Arad et al., 2021; Fitzpatrick et al., 2020; Spencer et al., 2021). Two researcher groups used the Generalized Anxiety Disorder Questionnaire (GAD-7) (Fitzpatrick et al., 2020; Spencer et al., 2021). One researcher used the Depression Anxiety Stress Scale (DASS-D) (Buckner et al., 2021).

*Depression*. Six studies were used to determine if COVID-19 caused an increase in mental health concerns. Four studies all agreed that there was an increase in depression because of COVID-19 (Hawes et al., 2021; Spencer et al., 2021; Buckner et al., 2021; Evans et al., 2021). Two studies did not assess depression (Arad et al., 202; Fitzpatrick et al., 2020). Based on the data presented, most of the studies support the idea that COVID-19 caused an increase in depression among adolescents.

*Anxiety*. Of the six studies used, the majority support the hypothesis that COVID-19 resulted in an increase in anxiety. One study did not assess anxiety among its participants (Evans et al., 2021). One study determined that emotional distress was increased in individuals with trait anxiety (Buckner et al., 2021). Four studies showed an increase in anxiety varying between a slight increase (Arad et al., 2021) to a significant increase (Fitzpatrick et al., 2020; Spencer et al., 2021; Hawes et al., 2021) among its participants. One study showed that the increase was primarily in the female population (Hawes et al., 2021). It can be determined that anxiety increased during COVID-19.

*Telehealth Treatment Findings.* Warnock-Parkes et al. (2021) points out that remote therapies have an unseen benefit attached to them for people who struggle with social anxieties. Since those anxieties are usually attributed to social interactions, people would be more likely to seek treatment if treatment is done remotely. Moorman (2022) backed up the claim that Warnock-Parkes et al. (2021) hypothesized. Prior to telehealth being implemented in the first nine months of 2019, attendance to therapy sessions was at 74%. That number increased to 89% with fewer cancellations when telehealth was the only service provided after COVID-19 started (Moorman, 2022). Guzick et al. (2022) also showed that mental health symptoms improved across all levels when telehealth was implemented using parent-child dyads for treatments.

*Art Therapy*. Malboeuf-Hurtubise et al. (2021) examined art therapy as a way to help students cope with anxiety and depression symptoms. They compared the effects of mandala drawing and emotion-based directed drawing on mental health using the Behavior Assessment Scale for Children-3rd Edition (BASC-III) as the assessment tool for data tracking. Data collected before the interventions and after the interventions showed that both forms of art therapy helped with mental health. It was determined that both therapies were viable options in helping students with an increase in mental health concerns.

**Recommendations for Future Research**

All six studies that examined if there was an increase or decrease in mental health concerns had between 120 to 451 participants. The majority had over 150 participants. The sample size was a fair representation of the age group which means that data is more valid. Each study also used two or more assessment tools to determine changes in mental health. Every study expressed that there was a need for more information and data to determine the effect of COVID-19 since the pandemic is not over as this report is being written.

The one major downfall of all the studies was the lack of a group of adolescents that was not affected by the global pandemic. Due to the nature of COVID-19, every person in the world was affected in one capacity or another. A control group that was not affected would have been beneficial in determining if there was a true increase in mental health concerns among adolescents, however, that was impossible to acquire. All studies that showed an increase had to determine an increase in mental health concerns by comparing data from the beginning of COVID-19 to information collected months later.

Two studies stated limitations pertained to relying on parents or caregivers to report symptoms of the children in their care. Fitzpatrick et al. (2020) looked at a caregiver-child dyad and was the only study to do such. One limitation was that they looked at a wide range in ages of the children (ages 1-19). While they did this intentionally to see similarities between ages, it limited the data for certain age groups. Research was also done across 32 states. This showed that regions determined outcomes in data. Areas with the most lenient restrictions showed a higher increase in mental health symptoms. The opposite was hypothesized. The major limitation of the study was that researchers relied on caregiver input on their children when caregiver mental health was also suffering. Due to these factors Fitzpatrick et al. (2020) recommends that more research is needed. Guzick et al. (2022) reported that relying on caregivers' administration of assessments was the major limitation of their study. They also reported that an unvalidated measure was used in their study. Both studies stressed the importance of more research in their areas but found the preliminary research valid in helping understand the effects of COVID-19.

Five studies mentioned their populations as limitations. Hawes et al. (2021) had one limitation where their sample size was not randomized, however, it was similar to census data for the area where the study was conducted. This study had the largest number of participants at 451, so they could account for more variations. Spencer et al. (2021) pointed out that their study pulled data from one hospital in one major city. The data may not be representative of other regions. Evans et al. (2021) reported their major limitation as having predominantly more females in their study. Buckner et al. (2021) had a predominately white female population that they polled. Not enough male students participated in the study to determine if the same mental health symptoms presented in that population. Buckner et al. (2021) also pulled from a non-clinical sample.  Data could be different for a clinical sample. Arad et al. (2021) looked at social

anxiety results versus generalized anxiety. Social Anxiety is a comorbid disorder that stems from anxiety. The increase in mental health symptoms could be bigger due to the population having a comorbid disorder to start with.

**Implications for Practice**

Mental health concerns are at the center of education this year. As an educator, the effects of COVID-19 on mental health are apparent in the classroom. I am constantly wanting to find ways to help students cope with mental health symptoms, so they can gain confidence in their education. When I started my education journey, I was always taught you have to Maslow before you Bloom. This refers to students needing to meet Maslow's Hierarchy of Needs before Bloom's Taxonomy takes place in the classroom. With mental health concerns at the forefront, a high number of students do not meet their basic needs of survival due to anxiety and depression being on the rise.

Preliminary research shows that there is an increase in mental health concerns among adolescents. Depression and anxiety increased in 2020-2021. All the researchers unanimously expressed the need for further research in this area to determine the long-term effects of COVID-19 on adolescent mental health. As of the date of this research, COVID-19 has been prevalent for 2 years with no end in sight. Although restrictions on stay-at-home orders have eased up across the country, society is not back to the normal that existed pre-COVID-19.

Mental health professionals and special education teachers have had to be creative in how they provide support to students with mental health crises. Telehealth has proven to be a viable option for a lot of adolescents. Therapists have been creative in using art therapy as a way to provide mental support to students through virtual options. Because of COVID-19, parents have become a major asset to their children's mental health support since mental health professionals

have had to rely on parent/guardian feedback to determine success of treatments. After reading the research, I have learned that COVID-19 has proven, with determination and perseverance, professionals are able to assist adolescents with mental health crises that are out of their control.

**Summary**

The findings of this research were preliminary due to the newness of the COVID-19 pandemic. The lack of control groups provided a unique situation for researchers. Mental health concerns will be at the forefront of discussion until COVID-19 is handled and until society settles into a new normal. As a special education teacher, it will be interesting to see what happens in the next ten years regarding mental health and treatment options for adolescents.

## References

American Psychiatric Association (APA). (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.

Arad, G., Shamai-Leshem, D., & Bar-Haim, Y. (2021). Social distancing during A COVID-19 lockdown contributes to the maintenance of social anxiety: A natural experiment. *Cognitive Therapy & Research*, *45*(4), 708-714. https://doi.org/10.1007/s10608-021-10231-7

Buckner, J. D., Abarno, C. N., Lewis, E. M., Zvolensky, M. J., & Gary, L. (2021) Increases in distress during stay-at-home mandates during COVID-19 pandemic: A longitudinal study. *Psychiatric Research, 298*. 113821. ISSN 0165-1781

Center for Disease Control and Prevention (CDC). (2022, April 10). *COVID data tracker*. Center for Disease Control and Prevention. https://covid.cdc.gov/covid-data-tracker/#cases_ casesper100klast7days

Ehlers, A. (1993). Somatic symptoms and panic attacks: A retrospective study of learning experiences. *Behavior Research and Therapy*, 31(3), 269-278. ISSN 0005-7967. https://doi.org/10.1016/0005-7967(93)90025-P

Ehmke, R. (2022, April 8). *How does anxiety affect kids in school?* Child Mind Institute. Retrieved April 10, 2022, from https://childmind.org/article/classroom-anxiety-in-children/

Evans, S., Alkan, E., Bhangoo, J., Tenenbaum, H., & Ng-Knight, T. (2021). Effects of the COVID-19 lockdown on mental health, wellbeing, sleep, and alcohol use in a UK student sample. *Psychiatry Research, 298*. 113819, ISSN 0165-1781. https://doi.org/10.1016/j.psychres.2021.113819

Fitzpatrick, O., Carson, A., & Weisz, J. R. (2020). Using mixed methods to identify the primary mental health problems and needs of children, adolescents, and their caregivers during the coronavirus (COVID-19) pandemic. *Child Psychiatry and Human Development, 52*(6), 1082-1093. https://doi.org/10.1007/s10578-020-01089-z

Guzick, A.G., Leong, A. W., Dickinson, E. M., Schneider, S. C., Zopatti, K., Manis, J.,... Storch, E. A. (2022). Brief, parent-led, transdiagnostic cognitive-behavioral teletherapy for youth with emotional problems related to the COVID-19 pandemic. *Journal of Affective Disorders, 301,* 130-137. https://doi.org/10.1016/j.jad.2022.01.034

Hawes, M., Szenczy, A., Klein, D., Hajcak, G., & Nelson, B. (2021). Increases in depression and anxiety symptoms in adolescents and young adults during the COVID-19 pandemic. *Psychological Medicine,* 1-9. doi:10.1017/S0033291720005358

Human Resources and Services Administration. (2021, August 16). *What is telehealth?* Https://Telehealth.Hhs.Gov/. Retrieved February 22, 2022, from https://telehealth.hhs.gov/patients/understanding-telehealth/?gclid=EAIaIQobChMIoLKL-tCU9gIVQzizAB3acgz2EAAYASAAEgJZIPD_BwE

Malboeuf-Hurtubise, C., Léger-Goodes, T., Mageau, G. A., Taylor, G., Herba, C. M., Chadi, N., & Lefrançois, D. (2021). Online art therapy in elementary schools during COVID-19: Results from a randomized cluster pilot and feasibility study and impact on mental health. *Child and Adolescent Psychiatry and Mental Health, 15*(1), 15-15. https://doi.org/10.1186/s13034-021-00367-5

Moorman, L. K. (2022). COVID-19 pandemic-related transition to telehealth in child and adolescent mental health. *Family Relations, 71*(1), 7-17. https://doi.org/10.1111/fare.12588

Morens, D. M., Daszak, P., Markel, H., & Taubenberger, J. K. (2020). Pandemic COVID-19 joins history's pandemic legion. *mBiology, 11*(3), e00812–20. https://doi.org/10.1128/mBio.00812-20

National Academies of Sciences, Engineering, and Medicine. (2020). *Social isolation and loneliness in older adults: Opportunities for the health care system*. Washington, DC: The National Academies Press. https://doi.org/10.17226/25663

Racine, N., McArthur, B. A., Cooke, J. E., Eirich, R., Zhu, J., & Madigan. S. (2021). Global prevalence of depressive and anxiety symptoms in children and adolescents during COVID-19: A meta-analysis. *JAMA Pediatr*. http://doi:10.1001/jamapediatrics. 2021.2482

Spencer, A., Oblath, R., Dayal, R., Loubeau, J. K., Lejeune, J., Sikov, J., … & Garg, A. (2021). Changes in psychosocial functioning among urban, school-age children during the COVID-19 pandemic. *Child and Adolescent Psychiatry and Mental Health, 15*(1), 73-73. https://doi.org/10.1186/s13034-021-00419-w

Warnock-Parkes, E., Wild, J., Thew, G. R., Kerr, A., Grey, N., Stott, R., … & Clark, D.M. (2020). Treating social anxiety disorder remotely with cogitative therapy. *The Cognitive Behaviour Therapist, 13*(30), 1-20. https://doi.org/10.1017/S1754470X2000032X

World Health Organization (WHO). (2022, April 10). *WHO coronavirus (Covid-19) dashboard*. Geneva, Switzerland: Author. https://covid19.who.int/