

2023

Understanding the Mental Health of Occupational Therapy Students During the COVID-19 Pandemic

Alisha Sharma
Salus University

Andrea Tyszka
Salus University

Follow this and additional works at: <https://encompass.eku.edu/jote>



Part of the [Curriculum and Instruction Commons](#), [Occupational Therapy Commons](#), and the [Psychiatric and Mental Health Commons](#)

Recommended Citation

Sharma, A., & Tyszka, A. (2023). Understanding the Mental Health of Occupational Therapy Students During the COVID-19 Pandemic. *Journal of Occupational Therapy Education*, 7 (1). <https://doi.org/10.26681/jote.2023.070103>

This Original Research is brought to you for free and open access by the Journals at Encompass. It has been accepted for inclusion in Journal of Occupational Therapy Education by an authorized editor of Encompass. For more information, please contact laura.edwards@eku.edu.

Understanding the Mental Health of Occupational Therapy Students During the COVID-19 Pandemic

Abstract

The COVID-19 pandemic has impacted the mental health of health professional students across the world. Although there are a growing number of studies regarding the mental health of other health professional students, there are currently limited studies regarding the mental health of entry-level occupational therapy (OT) and occupational therapy assistant (OTA) students in the United States, especially within the context of the COVID-19 pandemic. The purpose of this mixed methods survey study was to understand the mental health status of entry-level OT and OTA students in the United States during the COVID-19 pandemic in order to better support their mental health needs within academic programs. The results from 457 participants showed that among OT and OTA students combined, 20.3% (n = 93) were in the severe to extremely severe ranges for depression, 38.3% (n = 175) were in the severe to extremely severe ranges for anxiety, and 29.7% (n = 136) were in the severe to extremely severe ranges for stress. Additionally, the scores for anxiety (0.06, $p < 0.05$) approached significance indicating that OTA students had higher anxiety scores than OT students. Furthermore, five themes emerged: (1) Occupational Disruptions, (2) Intense Pervasive Negative Feelings, (3) Flexibility and Understanding from Faculty and Program, (4) Awareness, Access, and Availability of Mental Health Supports, and (5) Graduate School Stress Compounded by the Pandemic. These findings highlight the need for targeted mental health supports within occupational therapy educational programs in light of the mental health impacts of the COVID-19 pandemic.

Keywords

Occupational therapy students, mental health, COVID-19

Creative Commons License



This work is licensed under a [Creative Commons Attribution-Noncommercial-No Derivative Works 4.0 License](https://creativecommons.org/licenses/by-nc-nd/4.0/).

Acknowledgements

We would like to thank Dr. Fern Silverman and Dr. Greta Bunin for their valuable contributions and mentorship during this project.

Understanding the Mental Health of Occupational Therapy Students During the COVID-19 Pandemic

Alisha Sharma, OTD, MS, OTR/L

Andrea Tyszka, OTD, MS, OTR/L, SIPT

Salus University

United States

ABSTRACT

The COVID-19 pandemic has impacted the mental health of health professional students across the world. Although there are a growing number of studies regarding the mental health of other health professional students, there are currently limited studies regarding the mental health of entry-level occupational therapy (OT) and occupational therapy assistant (OTA) students in the United States, especially within the context of the COVID-19 pandemic. The purpose of this mixed methods survey study was to understand the mental health status of entry-level OT and OTA students in the United States during the COVID-19 pandemic in order to better support their mental health needs within academic programs. The results from 457 participants showed that among OT and OTA students combined, 20.3% ($n = 93$) were in the severe to extremely severe ranges for depression, 38.3% ($n = 175$) were in the severe to extremely severe ranges for anxiety, and 29.7% ($n = 136$) were in the severe to extremely severe ranges for stress. Additionally, the scores for anxiety (0.06, $p < 0.05$) approached significance indicating that OTA students had higher anxiety scores than OT students. Furthermore, five themes emerged: (1) Occupational Disruptions, (2) Intense Pervasive Negative Feelings, (3) Flexibility and Understanding from Faculty and Program, (4) Awareness, Access, and Availability of Mental Health Supports, and (5) Graduate School Stress Compounded by the Pandemic. These findings highlight the need for targeted mental health supports within occupational therapy educational programs in light of the mental health impacts of the COVID-19 pandemic.

According to the World Health Organization (WHO), rates of anxiety increased 26% and rates of depression increased 28% in 2020 due to the COVID-19 pandemic (WHO, 2022). Even after two years, the American Psychological Association (APA, 2022) reported that 63% of adults believed their life was changed forever by the COVID-19 pandemic based on a survey conducted of 3,012 participants between February 7 and

14, 2022 in the United States (para. 3). These findings may be largely attributed to the negative consequences caused by occupational disruption (Whitney & Walsh, 2020). Occupational disruption is “a temporary disturbance to a person’s usual pattern of occupational performance and occupational engagement” (p. 2); however, these disturbances may no longer be temporary for countless people. In fact, the World Federation of Occupational Therapists (2020) made the following public statement in response to the COVID-19 pandemic:

As a profession we recognise the consequences and changes that are occurring in how people access and undertake their occupations as a result of the COVID-19 pandemic. These include, but are not limited to: accessing resources, activities of daily living, communication, mobility, social isolation, displacement, mental health and wellbeing. Occupational therapists understand the vital need to access and use infection control measures combined with the need to sustain good psychological, mental health and stamina in order to stay safe and healthy. (para. 3)

Based on this statement, it is evident that the COVID-19 pandemic has impacted nearly all areas of occupation and, subsequently, caused detrimental effects to mental health. These effects to mental health can and should be addressed by occupational therapists (OT) among populations in all practice settings. Frontline healthcare workers, students who transitioned to virtual classes, people who lost their jobs or had to work from home, older adults and those who were considered at-risk, and people who lost their loved ones due to the virus are just a few examples of the populations who were affected by the COVID-19 pandemic’s abrupt and prolonged changes to daily life.

Literature Review

Students and Healthcare Professionals

Of these aforementioned populations, recent studies indicate that students and healthcare professionals were found to experience mental health issues more than others during the COVID-19 pandemic (Naser et al., 2020; Rehman et al., 2021). Fruehwirth et al. (2021) surveyed 419 first-year college students at a large public university in North Carolina and compared changes in the prevalence of moderate-severe anxiety and depression before and after the start of the COVID-19 pandemic. Researchers found that “moderate-severe anxiety increased from 18.1% before the pandemic to 25.3% within four months after the pandemic began; and the prevalence of moderate-severe depression increased from 21.5% to 31.7%” indicating a drastic rise in mental health issues (p. 1). Similarly, according to a survey by Mental Health in America (MHA, 2021) of 1,119 healthcare workers, “93% of healthcare workers were experiencing stress, 86% reported experiencing anxiety, 77% reported frustration, 76% reported exhaustion and burnout, and 75% said they were overwhelmed” between June to September of 2020 (MHA, 2021, para. 5). These studies emphasize the need to better understand the mental health of students and healthcare professionals in the context of the COVID-19 pandemic. Moreover, it may be beneficial to study the mental health of the combination of these populations, health professional students, as they are arguably the backbone of future global health.

Health Professional Students

Health professional students in all parts of the world are facing mental health challenges due to the COVID-19 pandemic. One study from the United States aimed to understand the mental health of undergraduate and graduate nursing students in relation to their experiences during the COVID-19 pandemic (Jardon & Choi, 2022). Results showed that approximately one-third of nursing students had high levels of depression, anxiety, and COVID-19-related traumatic stress. Additionally, there was no significant relationship between these three variables and mental health service utilization (including both campus-based and non-campus mental health service utilization). This study suggests there may be a lack of knowledge regarding the mental health supports that nursing students need. It also warrants universities and colleges to further investigate more targeted, discipline-specific mental health supports they can provide for their students. Another study from Australia aimed to understand the “impact, concerns, and coping strategies” related to the COVID-19 pandemic among 297 medical students in 2020 (Lyons et al., 2020, p. 649). Results showed that medical students across all four years experienced moderate psychological distress and 68% of medical students reported a decline in their mental well-being since the onset of the COVID-19 pandemic. The areas of life with the greatest negative impact were “social connectedness, medical studies, and stress levels,” and main concerns related to COVID-19 were “impact on studies (81% of respondents), followed by uncertainty about a return to normal (72%)” (p. 650). The most common coping strategies were video chats, social media applications, mindfulness, and meditation. Although this study shows evidence of the mental health issues faced by medical students, this study and several others only assessed the use of secondary prevention strategies, rather than primary prevention strategies, for mental health issues during the COVID-19 pandemic.

Occupational Therapy Students

A specific subset of health professional students are entry-level OT students. Current literature about OT students’ stress levels has largely been restricted to students from accredited programs, excluded entry-level OT assistant (OTA) students, combined OT students with other health professional students, and/or only assessed secondary, rather than primary, prevention strategies for mental health issues as mentioned before (Constantinidis & Matsukura, 2021; Lewis-Kipkulei et al., 2021). Nonetheless, past studies about the mental health of OT students indicated that OT students experienced personal, academic and university related stressors (Govender et al., 2015). For example, one study from Spain examined stress, anxiety, and depression among 252 students from nursing, OT, and physiotherapy degree programs in January 2021 (Marcén-Román et al., 2021). Results showed that 13.1% of students experienced stress, 71.4% of students experienced anxiety, and 81% of students experienced depression. Additionally, approximately 90% of students who reported stress were female and the highest stress levels were found among third-year OT students and unemployed students. Higher stress levels were also associated with an increased risk for developing depression and anxiety. Other studies have also found that high levels of stress in OT students can negatively affect their occupational engagement and balance (Grab et al., 2021; Henton et al., 2021). When left unmitigated, high levels of stress can potentially lead to burnout (Morales-Rodriguez et al., 2019).

Quadruple Aim

Preventing burnout is an integral part of the Quadruple Aim – a framework for healthcare systems to optimize performance – because it addresses the fourth aim of care team wellbeing (Bodenheimer & Sinsky, 2014). Burnout is defined as “physical, emotional, or mental exhaustion accompanied by decreased motivation, lowered performance, and negative attitudes toward oneself and others” (American Psychological Association [APA], 2020, para. 1). Like healthcare systems, it is important for academic programs to acknowledge their own unique responsibility in supporting care team wellbeing. Bandara et al. (2021) stated, “Educational programs provide an excellent opportunity for the integration and introduction of wellbeing strategies as existing evidence suggests that medical students may experience burnout early on during their educational training” (p. 18). This has become increasingly important as failing to address burnout and other mental health issues during educational training can lead to “depression, substance use problems, anxiety, and suicide in promising future physicians” (Thomas et al., 2011, p. 3). It is possible that the same risks apply to all health professional students. Therefore, teaching students self-care practices during educational training may benefit them even after they graduate from their respective programs because it equips them with primary prevention strategies for mitigating mental health issues before they even arise (Laposhka & Smallfield, 2022). It may also help reduce the taboo which often surrounds conversations about mental health in healthcare settings (Bandara et al., 2021).

Purpose

Although there are a growing number of studies about understanding the mental health of other health professional students, there are currently limited studies about understanding the mental health of both entry-level OT and OTA students in the United States, especially within the context of the COVID-19 pandemic. The purpose of this mixed methods study was to understand the mental health status of entry-level OT and OTA students in the United States during the COVID-19 pandemic to better support their mental health needs within academic programs.

Research Questions

1. What is the current level of self-reported depression, anxiety, and stress among OT students in the United States?
 - a) What is the current level of self-reported depression, anxiety, and stress among students in entry-level OT programs?
 - b) What is the current level of self-reported depression, anxiety, and stress among students in entry-level OTA programs?
2. How has the COVID-19 pandemic impacted the mental health status of OT and OTA students in the United States?
3. What are the mental health supports that OT and OTA students indicate needing from their academic programs in the United States?

Methodology

Study Design

This research study utilized a cross-sectional mixed methods survey design. The main purpose of a cross-sectional survey is to describe the frequency of a phenomenon in a defined time period (Portney & Watkins, 1993). Quantitative data was obtained to address the first research question about understanding the students' current levels of self-perceived depression, anxiety, and stress. Qualitative data was obtained to address the second and third research questions about understanding the impact of the COVID-19 pandemic on the students' mental health, their perceived adequacy of mental health supports currently offered by academic programs, and *additional* mental health supports they reported needing from academic programs. Institutional Review Board approval was obtained from a private university in Pennsylvania in January 2022.

Participants

Participants were included if they met the following criteria: (1) 18 years of age or older and (2) enrolled in an entry-level OT or OTA program in the United States at the time of the study. Participants who did not fit these criteria were excluded from the research study. To recruit participants, a voluntary sampling technique was used. An initial email was sent to the program directors of all entry-level OT and OTA programs in the United States using the contact information on the Accreditation of Occupational Therapy Education website. The program directors were requested to forward the email to students in their respective programs. A reminder email was sent to the program directors approximately three weeks after the initial email. Additionally, a post was created on the American Occupational Therapy Association (AOTA)'s CommuOT online discussion board. The recruitment period occurred in February 2022.

Survey

The anonymous, electronic survey was titled, "Understanding the Mental Health of Occupational Therapy Students During COVID-19 Survey", and consisted of 35 questions which took approximately 10 minutes to complete. The survey was divided into five parts: (1) informed consent, (2) eligibility questions, (3) demographic questions, (4) Depression Anxiety Stress Scales (DASS-21; Lovibond & Lovibond, 1995a), and (5) open-ended questions. The survey was available from February 1 – 28, 2022. It was created using Alchemer software.

Informed Consent

Participants were asked to read and acknowledge an electronic informed consent form which stated the research study's purpose, risks, benefits, and contact information at the beginning of the survey. Choosing to complete the survey indicated consent to participate in the research study. If at any time the participants felt uncomfortable with any questions or with their participation, they were free to refuse to answer or withdraw their consent by exiting the survey.

Eligibility Questions

Eligibility questions were related to the inclusion criteria which was to be (1) 18 years of age or older and (2) enrolled in an entry-level OT or OTA program in the United States at the time of the study.

Demographic Questions

Demographic questions were related to type of program, academic year, fieldwork status, age, gender, race/ethnicity, marital status, and employment status.

Depression Anxiety Stress Scales (DASS-21)

The DASS is a self-report questionnaire designed to measure depression, anxiety, and stress over the past week (Lovibond & Lovibond, 1995a). It can be used with populations as young as 12 years old and does not require specialized training. The DASS is comprised of three scales - depression, anxiety, and stress – which have seven items each. The depression scale measures “dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest/involvement, anhedonia, and inertia”; anxiety scale measures “autonomic arousal, skeletal musculature effects, situational anxiety, and subjective experience of anxious affect”; and stress scale measures “difficulty relaxing, nervous arousal, easily upset/agitated, irritable/over-reactive, and impatient” (Lovibond, 1995a, pp. 24-25). Items are measured on a four-point Likert Scale which ranges from “0 – Did not apply to me at all” to “3 – Applied to me very much, or most of the time” (p. 23). For this research study, the 21-item short form (DASS-21) was utilized due to its ease of use and reduced time of administration. Additionally, the DASS-21 shows acceptable psychometric properties as demonstrated by Chronbach’s alphas between 0.70 to 0.95 (Tavakol & Dennick, 2011). For reliability, the internal consistency scores for depression, anxiety, and stress had Cronbach’s alphas of 0.81, 0.73, and 0.81, respectively, in a normal sample of 717 participants (Lovibond & Lovibond, 1995a). For convergent validity, “the DASS Anxiety scale correlated 0.81 with the BAI [Beck Anxiety Index], and the DASS Depression scale correlated 0.74 with the BDI [Beck Depression Index]” (Lovibond & Lovibond, 1995b, p. 335). The DASS Manual also contains cut-off scores (i.e., normal, mild, moderate, severe, and extremely severe) for the three scales; however, it is important to note that the DASS is not a diagnostic tool since it is based on a dimensional, rather than categorical, concept of psychological disorders. Lovibond and Lovibond (1995a) state, “the differences between the depression, the anxiety, and the stress experienced by normal subjects and the clinically disturbed, are essentially differences of degree” (p. 3).

Therefore, the cut-off scores provided in the DASS manual are arbitrary and only serve as conventional labels to characterize degrees of severity compared to the normative sample. Given the descriptive, rather than diagnostic, purpose of the data collection, this would not preclude the DASS from being a useful tool for this study.

Open-ended Questions

The open-ended questions were the following: (1) Do you believe the COVID-19 pandemic has impacted your mental health? If yes, please explain how the COVID-19 pandemic has impacted your mental health. If no, please explain why the COVID-19

pandemic has not impacted your mental health; (2) Do you believe that academic programs adequately support your mental health? If yes, please explain how academic programs adequately support your mental health. If no, please explain why academic programs do not adequately support your mental health; and (3) What *additional* mental health supports, that are not already offered, do you believe that academic programs can offer to support your mental health?

Data Collection

The data was collected using Alchemer software and exported to the Statistical Package for the Social Sciences (SPSS) version 28.0.1.0. It was password protected both online and on personal devices (i.e., laptops and computers) belonging to the student principal investigator and faculty advisor. All of the data was anonymous and did not contain any of the 18 Protected Health Information (PHI) identifiers per the Health Information Portability and Accountability Act (HIPAA).

Data Analysis

The quantitative data was analyzed through descriptive and inferential statistics. Descriptive statistics allowed the researchers to describe and summarize the data collected. This included measuring frequencies and percentages, measures of central tendency, and variance (Taylor, 2017). Inferential statistics allowed the researchers to make inferences between groups. This included performing an independent samples t-test for normal (parametric) distributions and a Mann-Whitney U Test for skewed (nonparametric) distributions (Taylor, 2017). The distribution of the data and analyses were confirmed by an experienced biostatistician at the private university. The qualitative data was analyzed through thematic analysis using an inductive approach which allowed the findings to emerge from the raw data (Dillaway et al., 2017). Manual coding was performed using a four-step analytic process to identify emerging themes from the open-ended questions (Dillaway et al., 2017). Methodological and investigator triangulation, frequent peer debriefing, and audit trails were methods performed to ensure trustworthiness of the qualitative analysis (Portney & Watkins, 2009).

Results

Demographics

A total of 457 participants completed the survey. Eighty-five participants were omitted due to partial responses or not meeting the inclusion criteria. Out of the 457 participants, 72.6% (n = 332) were enrolled in OT programs (master's and entry-level doctorate) and 27.4% (n = 125) were enrolled in OTA programs (associate and baccalaureate). See Appendix A for further details regarding demographic information.

Quantitative Findings

First, using descriptive statistics in SPSS, the DASS-21 severity scores for depression, anxiety, and stress were analyzed for (1) OT Students, (2) OTA Students, and (3) OT and OTA Students Combined (see Tables 1-3.)

Depression**Table 1**

DASS-21 Depression Severity Scores of (1) OT Students, (2) OTA Students, and (3) OT and OTA Students Combined

OT Students		
Severity	Number	Percentage
Normal	158	47.6%
Mild	36	10.8%
Moderate	78	23.5%
Severe	27	8.1%
Extremely Severe	33	9.9%
OTA Students		
Severity	Number	Percentage
Normal	58	46.4%
Mild	15	12.0%
Moderate	19	15.2%
Severe	11	8.8%
Extremely Severe	22	17.6%
OT and OTA Students Combined		
Severity	Number	Percentage
Normal	216	47.3%
Mild	51	11.2%
Moderate	97	21.2%
Severe	38	8.3%
Extremely Severe	55	12.0%

Anxiety**Table 2**

DASS-21 Anxiety Severity Scores of (1) OT Students, (2) OTA Students, and (3) OT and OTA Students Combined

OT Students		
Severity	Number	Percentage
Normal	124	37.3%
Mild	24	7.2%
Moderate	63	19.0%
Severe	43	13.0%
Extremely Severe	78	23.5%
OTA Students		
Severity	Number	Percentage
Normal	41	32.8%
Mild	6	4.8%
Moderate	24	19.2%
Severe	12	9.6%
Extremely Severe	42	33.6%
OT and OTA Students Combined		
Severity	Number	Percentage
Normal	165	36.1%
Mild	30	6.6%
Moderate	87	19.0%
Severe	55	12.0%
Extremely Severe	120	26.3%

Stress**Table 3**

DASS-21 Stress Severity Scores of (1) OT Students, (2) OTA Students, and (3) OT and OTA Students Combined

OT Students		
Severity	Number	Percentage
Normal	111	33.4%
Mild	55	16.6%
Moderate	67	20.2%
Severe	55	16.6%
Extremely Severe	44	13.3%
OTA Students		
Severity	Number	Percentage
Normal	45	36.0%
Mild	15	12.0%
Moderate	28	22.4%
Severe	20	16.0%
Extremely Severe	17	13.6%
OT and OTA Students Combined		
Severity	Number	Percentage
Normal	156	34.1%
Mild	70	15.3%
Moderate	95	20.8%
Severe	75	16.4%
Extremely Severe	61	13.3%

Next, using inferential statistics in SPSS, an independent samples t-test was performed on the scores for stress between OT and OTA students. A Mann-Whitney U test was performed on the scores for depression and anxiety between OT and OTA students. There were no significant differences in the scores for stress (0.99, $p < 0.05$) and depression (0.25; $p < 0.05$) between OT and OTA students; however, scores for anxiety approached significance (0.06, $p < 0.05$) indicating that OTA students potentially had higher anxiety scores than OT students. Although the threshold for statistical significance was not reached, the trend does point to the need to examine for differences between OT and OTA students in future studies with larger sample sizes.

Lastly, the response rates were determined for the three qualitative questions. For the first question, “Do you believe the COVID-19 pandemic has impacted your mental health?”, 87.7% ($n = 401$) of students responded yes and 12.3% ($n = 56$) responded no. Next, for the second question, “Do you believe that academic programs adequately support your mental health?”, 46.5% ($n = 211$) of students responded yes and 53.5% ($n = 243$) responded no. Three responses were eliminated from the second question due to blank entries. Finally, the last question, “What *additional* mental health supports, that are not already offered, do you believe that academic programs can offer to support your mental health?”, received a total of 318 responses as it was optional.

Qualitative Findings

Five themes emerged from the qualitative data: (1) Occupational Disruptions, (2) Intense Pervasive Negative Feelings, (3) Flexibility and Understanding from Faculty and Program, (4) Awareness, Access, and Availability of Mental Health Supports, and (5) Graduate School Stress Compounded by the Pandemic.

Theme One: Occupational Disruptions

Most students reported that the COVID-19 pandemic caused occupational disruptions, or changes to their daily routines. Of these students, the majority perceived the occupational disruptions as having negative effects on their mental health. They reported that the COVID-19 pandemic decreased social participation, increased isolation, reduced exercise and leisure activities, triggered weight gain, created financial burdens, and caused challenges due to the transition from in-person learning to virtual learning. For example, one OT student stated the following:

“My first year of grad school was online When I had to do assignments and online fieldwork, I very rarely left my room. It was very hard being stationary I felt and still feel trapped and sometimes lonely because covid has limited the social connection with others. Due to covid, I feel that taking grad school classes online has instilled a fear in me that I won't be a OT.”

Alternatively, some students perceived the occupational disruptions as having positive effects on their mental health. They reported that the occupational disruptions allowed them to “*slow down*” and provided the opportunity for personal growth, self-reflection, and autonomy. Others reported that the occupational disruptions gave them more time with loved ones at home. They reported that increased isolation was favorable to them

because they were already introverted and preferred staying at home. For example, one OTA student stated, *“I have an amazing family and support system. I’m also an introvert with social anxiety and enjoyed the excuse to stay home and be a hermit. I wish it was for other reasons though.”*

Lastly, a few students perceived the occupational disruptions as having minimal or no effects on their mental health. They reported the occupational disruptions did not affect their mental health because they had already been experiencing mental health issues prior to the COVID-19 pandemic. For example, one OTA student stated, *“I do not believe COVID-19 has impacted my mental health because stress from my previous job and my college workload would have occurred whether or not COVID existed.”* Other students reported that the occupational disruptions did not affect their mental health because they had strong support systems, focused on the positives, used coping strategies (i.e., exercise, hobbies, and self-care), and relied on their values, beliefs, faith, and spirituality. Additionally, a very small number reported they maintained the same daily routines as prior to the COVID-19 pandemic. For example, one OT student stated the following:

“COVID-19 has not impacted my mental health because I still do all the activities that I normally do everyday. I have many hobbies that kept me busy and I have a great, supportive family. I was able to go to work and school and travel to be with my family and close friends”.

Theme Two: Intense Pervasive Negative Feelings

Most students reported negative feelings associated with the COVID-19 pandemic. These negative feelings included sadness and depression from decreased social participation, loneliness from increased isolation, fear about oneself and loved ones getting infected with COVID-19, anxiety about staying safe and healthy, lack of motivation for daily activities, uncertainty about the future, stress related to virtual learning, social anxiety during a return to in-person learning, worry about clinical preparedness, and exacerbation of pre-existing mental health issues. For example, one OT student stated the following:

“It isolated me in a way that I hadn’t experienced before and it really made it difficult for me to spend time with people . . . It became too easy to lay in bed and embrace my numbness. I’ve experienced chronic depression since childhood and I plummeted into another depressive episode when the pandemic began, the same time I started my OT program. I was barely taking care of myself much less surviving classes. I’d never felt so alone and defeated.”

Another OT student stated the following:

“I do particularly poorly with online learning, and it stresses me out . . . I was terrified every time I left the house, worried that I would bring COVID home to my family and if would kill them. I was also anxious entering fieldwork for the first time, as I don’t know how to show happy facial expressions to the patients with a mask on, I was worried they would think I’m cold or distant. I also felt unprepared to be around so many people after so long, and felt disoriented.”

Moreover, while the orientation toward negative feelings throughout the pandemic would be expected, the intensity and pervasiveness of those feelings is worth noting. Many students made statements such as *“like never before,” “through the roof,”* or *“greater than anything I’ve experienced before”* in relation to their stress, anxiety or sense of loneliness. A few students also noted the cyclical nature of their negative feelings. The less they socialized during lockdown, the less capable they felt of doing it. They began to develop a fear of socialization that extended from simply being in crowded places to going out in public, in general. For example, one OT student stated, *“The pandemic has increased my social anxiety and makes me more likely to isolate myself, which in turn makes me more prone to depression.”*

Theme Three: Flexibility and Understanding from Faculty and Program

More than half of the students reported lack of flexibility and understanding from their faculty and program during the COVID-19 pandemic. Several students reported that schoolwork was prioritized over mental health and mental health concerns were not taken seriously in their programs. For example, one OT student stated the following:

“There is little to no grace as mental health struggles increase the difficulty of academic demands. Sharing such situations with professors are still often met with a stigma of our weakness and no safety net of accommodations. Absence policies don’t account for health appointments, funerals, or other commitments that require our attention and could support overall wellbeing.”

However, other students reported that it depended on individual professors as not all professors were approachable about mental health concerns. Another OT student stated the following:

“Depends on the professor, but most professors expect a very high standard of the student and forget about other commitments. For example, my professor spoke negatively to me when I had to miss roughly 30 minutes of a class for a doctor’s appointment that had no other times available, and I would have appreciated her being more understanding that school is not ranked above health.”

Alternatively, slightly less than half of the students reported presence of flexibility and understanding from their faculty and program during the COVID-19 pandemic. They reported that their faculty and programs discussed mental health and self-care during class, frequently checked-in with students, offered assignment extensions and redos, allowed excused mental health days, and provided the option for virtual learning. Additionally, they accommodated the transition from in-person learning to virtual learning (and vice-versa). For example, one OT student stated the following:

“They talk about our mental health a lot in classes and validate our need for rest and relaxation to stay healthy, sharing their own experiences and hardships in life to teach and advise us in this. I have also had multiple professors allow extended assignment deadlines and absences if something is happening in my personal life and feel like they care not just about my success, but my personal health and well-being.”

Another OT student stated the following:

"They provide opportunities to work together in an adapted class setting (e.g., social distancing, having lab in two classrooms, having two class times for half the class) to allow for an optimal academic experience in the pandemic. The professors are also accommodating for illness with the use of virtual learning such as Zoom."

Theme Four: Awareness, Access, and Availability of Mental Health Supports

Most students reported the need for improved awareness, access, and availability of mental health supports within programs.

Regarding awareness, students reported there was little awareness brought about maintaining or improving their own mental health during their academic curricula. For example, one OT student stated, *"It is only mentioned a few times during the semester-on syllabus day and a couple times after that."* Similarly, another OT student stated, *"They point us in the direction of resources but do not really help to bring awareness to mental health or do any real work with students to encourage active engagement in improving our own mental health."*

Regarding access, students reported that mental health counselors were limited, did not have enough appointment times, or their hours did not align with the students' class schedules. Other students reported that mental health counselors were only accessible to undergraduate students or in-state students. For example, one OT student stated the following:

"I feel like a lot of the time mental health is pushed under the rug at school and it looks like an excuse for your poor performance or attitude. My university has counseling, but they do not have the availability that is needed to work into a grad students schedule. We don't get out of class until 4 some days and the counseling center closes at 3 so working in time to seek help is almost impossible."

Regarding availability, students provided numerous suggestions for additional supports which programs can offer to support their mental health. These included mental health days, mentorship from faculty, discussions about mental health, mandatory check-in meetings with advisors, option for virtual learning, positive feedback, peer support groups, accessible mental health counseling, brain breaks, sensory rooms, social events, yoga classes, meditation time, mindfulness sessions, extended holidays, aromatherapy, therapy dogs, and many more. For example, one OT student stated the following:

"I think it would be nice to have peer support groups especially within the first year of programs ... I also think that programs could do a mental health check in maybe once a month with students and have a kind and caring faculty member to help direct, one that really cares. Additional ideas could be events for de stressing, something fun that isn't so revolved around school such as arts and crafts, bringing in a therapy dog, having a relaxing music day, a discussion day, anything to show that they care and value the mental health of their students."

Theme Five: Graduate School Stress Compounded by the Pandemic

Many students reported that their stress of being in graduate school had been compounded by the COVID-19 pandemic. They stated that faculty and programs “*still continue to expect high performance under immense pressure*” and reported difficulty maintaining occupational balance. For example, one OT student stated the following:

“There is A LOT of pressure and stress in my program. There are countless assignments. We are in class for 20+ hours per week and then are expected to complete outside activities as well. I am doing school (class, assignments, group projects, extracurriculars, homework) probably 50+ hours per week. I have no free-time and very little room for occupational balance.”

Additionally, some students reported that there was minimal consideration by faculty and programs for the transition from in-person learning to virtual learning. They reported that virtual learning led to more “busy work” and professors were not considerate about students’ other time commitments. For example, one OT student stated the following:

“During the pandemic my anxiety spiraled into a greater issue than anything I’ve ever experienced before . . . My professors piled on more “busy work” than ever before and there were times we had 10 assignments due in one week. It added stress and anxiety and made it hard to be motivated to participate in school online.”

Furthermore, students reported that faculty and programs were not empathetic about the mental health burden of the pandemic. For example, one OT student stated, “*Academic programs, in my experiences, have made statements saying ‘we’re all in this together’ or ‘thank you for your flexibility’, but haven’t actually addressed the mental strain that COVID has on our learning experiences or even our personal experiences.*” Another OT student stated the following:

“I think my program tried to reduce the stress they were putting on students in the beginning of the pandemic, but eventually they prioritized ‘returning to normal’ and did not recognize that students were still more anxious and depressed, and the return to normal amounts of school pressure just compounded this.”

Lastly, students suggested that faculty and programs should be trained in using trauma-informed approaches and mental health practices within the classroom setting. For example, one OT student stated, “*Our professors could use more education on implementing trauma informed care in the classroom and on empathetic interactions.*” Similarly, another OT student suggested, “*More training for professors and staff for understanding and knowing how to help students struggling with mental health.*”

Discussion

The findings of our research study highlight two main implications for entry-level OT and OTA students including: (1) their mental health impact from the COVID-19 pandemic and (2) mental health needs within academic programs.

Mental Health Impact from the COVID-19 Pandemic

Quantitatively, in regard to the students' mental health impact from the COVID-19 pandemic, our descriptive statistics showed that more than half of all OT and OTA students were in the mild to extremely severe ranges for depression, anxiety, and/or stress and 87.7% reported that the COVID-19 pandemic impacted their mental health. These findings are consistent with other studies regarding the mental health status of health professional students during the COVID-19 pandemic (Christophers et al., 2021; Marcén-Román et al., 2021). Moreover, these findings are not limited to the initial lockdown phase of the pandemic but persisted three months to one year after the pandemic began pointing toward the long-term nature of the mental health impact. This mirrors a trend in the data that emerged prior to the pandemic. In a scoping review, Constantinidis et al. (2021) examined articles published from 1993 to 2019 and found that stress affected OT students' mental health more than other students. While medical students were studied more frequently, OT students were more likely to be depressed and had a higher risk of suicidal ideation. These trends point toward the importance of studying factors related to depression, anxiety, and stress in OT and OTA students, as well as investigating wellness programs to help students mitigate stress and bolster their mental health.

Qualitatively, the mental health impact from the COVID-19 pandemic centers around the themes of occupational disruptions and intense pervasive negative feelings. Our study found that students reported that the COVID-19 pandemic caused occupational disruptions, or changes to their daily routines. Most students perceived the occupational disruptions as having negative effects on their mental health, but some students perceived them as having positive, minimal, or no effects. These findings show similarities with other studies (Rasmussen et al., 2022; Reinhart et al., 2021). The pandemic caused negative disruptions to school and clinical routines, leaving students with a sense of being disengaged, disconnected, unfocused and unprepared for their transition from health professional student to health professional. However, our findings show there were some positive aspects to the disruptions in that it afforded students greater flexibility in their schedules, facilitated more small group work, and provided students with the opportunity to build resilience skills.

Our study also found that students reported a variety of intense pervasive negative feelings associated with the COVID-19 pandemic. These findings match findings from several studies (Browning et al., 2021; Lyons et al., 2020; Malik & Javed, 2021; Son et al., 2020). For example, one study involving 195 undergraduate students at a large public university in Texas found that 71% of students reported increased stress and anxiety due to the COVID-19 pandemic in April 2020 (Son et al., 2020). The two most common stressors identified by the students were concerns about health of oneself and health of loved ones as well as difficulty concentrating. Our study found similar patterns including fear about oneself and loved ones getting infected with COVID-19, anxiety about staying safe and healthy, and lack of motivation for daily activities. Another study conducted on 966 university students at a private university in Oman found that 96.9% of students reported stress caused by COVID-19 induced e-learning (Malik & Javed, 2021). The two main psychological factors for stress were "constant fear of losing

grades” and “worry about performance” (p. 4). Our study also found stress related to virtual learning and worry about clinical preparedness frequently reported by students. Interestingly, unlike the findings from our study in which students reported an exacerbation of pre-existing mental health issues, one study found that “students with preexisting mental health challenges showed improving, if not similar, mental health during the pandemic” (Hamza et al., 2021, p. 26). This is likely due to the strategies they were able to draw upon as students with experience managing stress, anxiety and depression. Lastly, a study involving 2,534 students across seven universities in the United States assessed the level of psychological impact from the COVID-19 pandemic between mid-March to early-May 2020 (Browning et al., 2021). Researchers found that being female, between 18 to 24 years of age, and spending more than eight hours on a screen daily were risk factors for high levels of psychological impact, which was measured by two factors, emotional distress and worry time. These risk factors are characteristic of the sample from our study as well as the population of entry-level OT and OTA students in the United States which is predominantly female (AOTA, 2020).

Mental Health Needs Within Academic Programs

In regard to the students’ mental health needs within academic programs, our study found that more than half of the students reported a lack of flexibility and understanding from their faculty and program during the COVID-19 pandemic. Students also reported that schoolwork was prioritized over mental health and not all professors were approachable about mental health concerns. This finding shows parallels with another study which assessed the impact of trauma on 74 entry-level OT students in the United States (Wells et al., 2021). Data from that study pointed toward the need for a more trauma informed approach, as some participants described negative interactions with faculty after disclosing their trauma. It should be noted that while roughly half of the students in our study reported lack of flexibility, the other half described the presence of flexibility and understanding from their faculty and program during the COVID-19 pandemic that was very helpful in mitigating pandemic related stress and anxiety. This finding also shows parallels with other studies which examined teaching practices during the pandemic (Gelles et al., 2020; Rasmussen et al., 2022). For example, a case study involving 11 second year engineering students found that students appreciated compassionate flexibility from faculty during virtual learning (Gelles et al., 2020). Similarly, Rasmussen et al. (2002) examined psychosocial wellbeing and learning in nursing and midwifery programs. Researchers found that students appreciated extra time and relaxed guidelines provided during pandemic learning that recognized students have competing demands while learning from home. These studies describe the presence of flexible teaching strategies and increased understanding towards mental health concerns during the COVID-19 pandemic which are similar to those observed in our study.

Next, our study found that students reported the need for improved awareness, access, and availability of mental health supports within programs. In regard to the little awareness brought about maintaining or improving the students’ own mental health during their academic curricula, Harris et al. (2022) stated that, “The more students hear and see about mental health, the more it is normalized and the more they will talk to

each other about it, seek out and complete training, help others, and seek help for themselves” (p. 254). Moreover, academic programs should “boost their outreach to particularly vulnerable groups—that is, populations at risk of high levels of psychological impact from COVID-19” (Browning et al., 2021, p. 18). However, as more students reach out to access mental health services, universities need to ensure that services are available and able to accommodate busy graduate student schedules. Several of the participants in our study noted that services were available on campus but restricted to undergraduate students or the counselors' hours were limited to when the students were in class. This sentiment was echoed in a study by Morgan (2021) that suggested college counseling centers add additional evening and weekend hours to better accommodate students' schedules and ensure better availability to those in crisis. In regard to the availability of mental health supports, students in our study suggested numerous *additional* mental health supports that are not already offered by their respective programs. These included having coping strategies infused into the curriculum and classes, taking mindfulness breaks, spreading out the workload, and allowing mental health days as excused absences. However, limited studies exist which assess the need for or efficacy of these strategies, especially as they are weighed against the rigors of adequately preparing students for the transition to clinical practice.

Lastly, our study found that students reported that the stress of being in graduate school had been compounded by the COVID-19 pandemic and they struggled to maintain occupational balance. These findings are consistent with other studies (Henton et al., 2021; Rodríguez-Fernández et al., 2021). For example, one study found that “being a student predicts a lower occupational balance during social isolation and forced home confinement” (Rodríguez-Fernández et al., 2021, p. 6). Another study from prior to the COVID-19 pandemic explored perceptions of stress, mindfulness, and occupational engagement among 490 entry-level OT students in the United States and found that OT students reported high levels of stress mainly due to academic responsibilities (Henton et al., 2021). This consequently affected their engagement in meaningful activities and positive coping strategies which was reported by the students in our study as well. Additionally, our study found that students reported there was minimal consideration by faculty and programs for the transition from in-person learning to virtual learning. Two studies showed corroborating evidence regarding the increase in “busy work” for students during virtual learning as well as its association with reduced academic achievement (Gelles et al., 2020; Motz et al., 2021). Finally, our study found that students reported their faculty and programs were not empathetic about the mental health burden of the pandemic and suggested they should receive training in trauma-informed approaches. Wells et al. (2021) stated that, “An awareness of trauma-informed care within the educational setting can move toward ensuring that students are not treated differently when it comes to disclosure of trauma” (p. 10).

Overall, the rigorous nature of entry-level OT and OTA programs creates both internal and external pressures to succeed. In recent years, researchers have begun to examine how OT students respond to stress and the impact of stress on their overall wellbeing. In light of the additional burdens placed on health professional students during the pandemic, it is a critical time to hasten the examination of the relationship of depression,

anxiety, and stress to burnout, as well as evaluate supports that can be put into place to mitigate mental health issues while simultaneously maintaining academic rigor and program quality (Constantinidis et al., 2021; Lewis-Kipulei et al., 2021).

Implications for Occupational Therapy Education

By understanding the mental health impact from the COVID-19 pandemic and mental health needs within academic programs, academic programs can develop and integrate targeted mental health supports within their curricula to promote wellbeing, resiliency, quality of life, and academic success for their students who are training to become future OT practitioners. Addressing mental health preemptively also aligns with the Quadruple Aim framework as discussed earlier in this paper (Bodenheimer & Sinsky, 2014). Another framework which can be used to support this goal is the Doing-Being-Becoming-Belonging framework (Wilcock, 1999).

Doing-Being-Becoming-Belonging

The Doing-Being-Becoming-Belonging framework was developed by Dr. Ann Allart Wilcock (Wilcock, 1999). Wilcock believed that occupation is a synthesis of the constructs, 'doing', 'being', and 'becoming'. She stated that, "a dynamic balance between doing and being is central to healthy living and how becoming whatever a person is best fitted to become is dependent on both" (p. 2). According to this framework, doing involves all of the activities one needs and wants to perform, being involves allowing oneself stillness and time to simply "be", and becoming involves the processes of transformation and self-actualization. The construct of 'belonging' was added to this framework later after Hammel (2014) explained how it relates to "contributions to life satisfaction and to occupational engagement: of social interaction and connections, mutual support and reciprocity, a sense of being valued and socially included, and the ability and opportunity to contribute to others" (p. 41).

Academic programs can use the Doing-Being-Becoming-Belonging framework as a guide to support the mental health needs of their students through all four constructs of occupation (Keptner & McCarthy, 2020). For example, doing may involve assisting students in their learning process by offering academic supports such as tutoring or an academic writing center. Being may involve helping students reflect on their roles as graduate students and offering programs to help them transition from undergraduate to graduate learning in a healthy and occupationally balanced way. Becoming may involve guiding the transformation of students into future OT practitioners by providing them with rich opportunities to observe in both traditional and non-traditional practice settings. Lastly, belonging may involve fostering a sense of connectedness and community among the students at their respective entry-level OT or OTA program through structured peer mentorship and professional networking opportunities. These four constructs of occupation serve as types of supports that academic programs can provide to their students to promote their overall mental health and wellbeing.

Occupational Therapy's Distinct Value in Mental Health

It is important to note that incorporating the Quadruple Aim and Doing-Being-Becoming-Belonging frameworks into entry-level OT and OTA curricula also aligns with the distinct value of OT in mental health promotion, prevention, and intervention (AOTA, 2016; Bodenheimer & Sinsky, 2014; Wilcock, 1999). AOTA suggests occupational therapists apply a public health approach to mental health by using a three-tier model to guide the different levels of mental health supports which involve: Tier 1 – Universal Services, Tier 2 – Targeted Services, and Tier 3 – Intensive Interventions. This further supports the impetus for academic programs to offer Tier 1 – Universal Services so that all students, regardless of whether or not they are facing mental health issues, are provided services to support their mental health and wellbeing. Some examples of universal services include:

Encouraging participation in health-promoting occupations (e.g., enjoyable activities, healthy eating, exercise, adequate sleep); fostering self-regulation and coping strategies (e.g., mindfulness, yoga); promoting mental health literacy (e.g., knowing how to take care of one's mental health and what to do when experiencing symptoms associated with mental ill health). (p. 4)

While it is important to remember that OT faculty are not in a position to provide direct OT services to their students, they can recognize the long-term mental health impact of the COVID-19 pandemic and work to safeguard student wellbeing.

Limitations and Future Directions

There were many limitations of this research study. First, participant recruitment was dependent upon program directors of all entry-level OT and OTA programs in the United States forwarding the recruitment emails to students in their respective programs. It is unknown how many program directors actually forwarded the emails. Second, the study had a small sample size and geographic information was not collected since the data was anonymous. This makes it difficult to generalize the findings from the sample to the population of entry-level OT and OTA students in the United States as there may be students from certain geographic regions who participated in the study at higher or lower frequencies than students from other geographic regions. Third, there may be voluntary response bias. It is likely that students who participated in this study were drawn to the topics of mental health, COVID-19, and OT education which were stated in the recruitment emails. Fourth, this was a cross-sectional study in which data was collected during February 2022 directly after a surge of infections due to the Omicron variant (Iuliano et al., 2022). It is possible that this period of time contributed to the findings of this study. Lastly, it is important to note that the mental health of entry-level OT and OTA students may also depend on local and federal government systems' response to the pandemic (i.e., availability of vaccines, mask mandates, social distancing policies/regulations, mandatory quarantines, etc.). Such variability makes it challenging to generalize the findings from the sample to the population of entry-level OT and OTA students in the United States.

Future research should investigate the risk factors for increased depression, anxiety, and stress as well as long-term effectiveness of the suggested mental health supports. Additionally, given that differences between entry-level OT and OTA students' anxiety levels approached significance in this study, it is recommended that those differences be examined with larger sample sizes. Demographic factors should also be considered and measured in future studies as entry-level OTA students are more likely to be older, undergoing a career change, and identify as Black or African American (Colaianne et al., 2022). These demographic factors could have confounding variables associated with them that increase a student's susceptibility to anxiety.

Conclusion

The findings of this study indicate that the majority of entry-level OT and OTA students are facing depression, anxiety, and stress to some level. Most students reported the COVID-19 pandemic impacted their mental health and many reported that flexibility and understanding from faculty was helpful in mitigating pandemic related stress. However, more than half of the students reported that academic programs do not adequately support their mental health and students suggested numerous *additional* mental health supports that academic programs can offer to support their mental health. This contributes to the greater understanding of the mental health impact from the COVID-19 pandemic and mental health needs within academic programs for entry-level OT and OTA students (and may possibly have implications for students in other healthcare disciplines). With this knowledge, academic programs can improve the overall delivery of OT education by knowing how to better support the mental health of entry-level OT and OTA students, especially in the context of a global pandemic. Not only can this promote increased wellbeing, resiliency, quality of life, and academic success for students, but it may also lead to better health outcomes for the students' future clients as well.

References

- American Occupational Therapy Association. (2016). *Mental health promotion, prevention, and intervention across the lifespan*. <https://www.aota.org/-/media/Corporate/Files/Practice/MentalHealth/Distinct-Value-Mental-Health.pdf>
- American Occupational Therapy Association. (2020). *2019 workforce & salary survey*.
- American Psychological Association. (2020). Burnout. *APA Dictionary of Psychology*. <https://dictionary.apa.org/burnout>
- American Psychological Association. (2022). *Stress in America: Money, inflation, war pile on to nation stuck in COVID-19 survival mode*. <https://www.apa.org/news/press/releases/stress/2022/march-2022-survival-mode>
- Bandara, N.A., Yada, R., Wong, R. (2021). Establishing self-care practices early in medical and health education: A reflection on lessons learnt from the COVID-19 pandemic. *World Journal of Medical Education and Research*, 26(1), 17-20.
- Bodenheimer, T., & Sinsky, C. (2014). From triple to quadruple aim: Care of the patient requires care of the provider. *Annals of Family Medicine*, 12(6), 573-576. <https://doi.org/10.1370/afm.1713>

- Browning, M., Larson, L. R., Sharaievska, I., Rigolon, A., McAnirlin, O., Mullenbach, L., Cloutier, S., Vu, T. M., Thomsen, J., Reigner, N., Metcalf, E. C., D'Antonio, A., Helbich, M., Bratman, G. N., & Alvarez, H. O. (2021). Psychological impacts from COVID-19 among university students: Risk factors across seven states in the United States. *PloS One*, 16(1), e0245327. <https://doi.org/10.1371/journal.pone.0245327>
- Christophers, B., Nieblas-Bedolla, E., Gordon-Elliott, J. S., Kang, Y., Holcomb, K., & Frey, M. K. (2021). Mental health of US medical students during the COVID-19 pandemic. *Journal of General Internal Medicine*, 36(10), 3295–3297. <https://doi.org/10.1007/s11606-021-07059-y>
- Colaianne, D., Tovar, G., Wilson, D., & Zapanta, H. (2022). Factors Influencing the Diversity of Occupational Therapy Students. *Journal of Occupational Therapy Education*, 6(1). <https://doi.org/10.26681/jote.2022.060102>
- Constantinidis, T. C., & Matsukura, T. S. (2021). Mental health of occupational therapy students: Scoping review. *Brazilian Journal of Occupational Therapy*, 29(e2139), 1-20. <https://doi.org/10.1590/2526-8910.ctoAR2139>
- Dillaway, H., Lysack, C., & Luborsky, M. (2017). Qualitative approaches to interpreting and reporting data. In R. Taylor's (Ed.), *Kielhofner's research in occupational therapy: Methods of inquiry for enhancing practice* (2nd ed., pp. 330-341). FA Davis.
- Fruehwirth, J. C., Biswas, S., & Perreira, K. M. (2021). The Covid-19 pandemic and mental health of first-year college students: Examining the effect of Covid-19 stressors using longitudinal data. *PLOS One*, 16(3), e0247999. <https://doi.org/10.1371/journal.pone.0247999>
- Gelles, L. A., Lord, S. M., Hoople, G. D., Chen, D. A., & Mejia, J. A. (2020). Compassionate flexibility and self-discipline: Student adaptation to emergency remote teaching in an integrated engineering energy course during COVID-19. *Education Sciences*, 10(11), 304. <https://doi.org/10.3390/educsci10110304>
- Govender, P., Mkhabela, S., Hlongwane, M., Jalim, K., & Jetha, C. (2015). OT student's experiences of stress and coping. *South African Journal of Occupational Therapy*, 45(3), 34-39. <http://dx.doi.org/10.17159/2310-3833/2015/v45n3/a7>
- Grab, J., Green, M., Norris, J., Pilchik, K., & Fisher, G. S. (2021). Exploring occupational therapy student stress: Professor and student perspectives. *Journal of Occupational Therapy Education*, 5(1), 1-27. <https://doi.org/10.26681/jote.2021.050103>
- Hammell, K. R. W. (2014). Belonging, occupation, and human well-being: An exploration. *Canadian Journal of Occupational Therapy*, 81(1), 39-50. <https://doi.org/10.1177/0008417413520489>
- Hamza, C. A., Ewing, L., Heath, N. L., & Goldstein, A. L. (2021). When social isolation is nothing new: A longitudinal study on psychological distress during COVID-19 among university students with and without preexisting mental health concerns. *Canadian Psychology*, 62(1), 20-30. <https://doi.org/10.1037/cap0000255>
- Harris, B.R., Maher, B.M., & Wentworth, L. (2022). Optimizing efforts to promote mental health on college and university campuses: Recommendations to facilitate usage of services, resources, and supports. *Journal of Behavioral Health Services & Research*, 49(2), 252-258. <https://doi.org/10.1007/s11414-021-09780-2>

- Henton, P., Targonski, C., Gambrel, A., Rink, C., & Wirtz, S. (2021). Perceptions of stress, mindfulness, and occupational engagement among graduate-level occupational therapy students. *Journal of Occupational Therapy Education*, 5(3), 1-28. <https://doi.org/10.26681/jote.2021.050309>
- Iuliano, A. D., Brunkard, J. M., Boehmer, T. K., Peterson, E., Adjei, S., Binder, A. M., Cobb, S., Graff, P., Hidalgo, P., Panaggio, M. J., Rainey, J. J., Rao, P., Soetebier, K., Wacaster, S., Ai, C., Gupta, V., Molinari, N. M., & Ritchey, M. D. (2022). Trends in disease severity and health care utilization during the early Omicron variant period compared with previous SARS-CoV-2 high transmission periods - United States, December 2020-January 2022. *Morbidity and Mortality Weekly Report*, 71(4), 146-152. <https://doi.org/10.15585/mmwr.mm7104e4>
- Jardon, C., & Choi, K. R. (2022). COVID-19 experiences and mental health among graduate and undergraduate nursing students in Los Angeles. *Journal of the American Psychiatric Nurses Association*, 1-9. <https://doi.org/10.1177/10783903211072222>
- Keptner, K. M., & McCarthy, K. (2020). Disruption of academic occupations during COVID-19: Impact on mental health and the role of occupational therapy in tertiary education. *World Federation of Occupational Therapists Bulletin*, 76(2), 78-81. <https://doi.org/10.1080/14473828.2020.1822575>
- Laposh, I., & Smallfield, S. (2022). Self-care: An occupational therapy student perspective. *Journal of Occupational Therapy Education*, 6(1), 1-26. <https://doi.org/10.26681/jote.2022.060105>
- Lewis-Kipkulei, P., Dunn, L. S., & Carpenter, A. M. (2021). Implications for occupational therapy student stress, well-being, and coping: A scoping review. *Journal of Occupational Therapy Education*, 5(1), 1-22. <https://doi.org/10.26681/jote.2021.050102>
- Lovibond, S.H., & Lovibond, P.F. (1995a). *Manual for the Depression Anxiety Stress Scales* (2nd ed.). Psychology Foundation.
- Lovibond, P.F., & Lovibond, S.H. (1995b). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy*, 33(3), 335-343. [https://doi.org/10.1016/0005-7967\(94\)00075-U](https://doi.org/10.1016/0005-7967(94)00075-U)
- Lyons, Z., Wilcox, H., Leung, L., & Dearsley, O. (2020). COVID-19 and the mental well-being of Australian medical students: Impact, concerns and coping strategies used. *Australasian Psychiatry*, 28(6), 649-652. <https://doi.org/10.1177/1039856220947945>
- Malik, M., & Javed, S. (2021). Perceived stress among university students in Oman during COVID-19-induced e-learning. *Middle East Current Psychiatry*, 28(1), 1-8. <https://doi.org/10.1186/s43045-021-00131-7>
- Marcén-Román, Y., Gasch-Gallen, A., Vela Martín de la Mota, I. I., Calatayud, E., Gómez-Soria, I., & Rodríguez-Roca, B. (2021). Stress perceived by university health sciences students, 1 year after Covid-19 pandemic. *International Journal of Environmental Research and Public Health*, 18(10), 5233. <https://doi.org/10.3390/ijerph18105233>
- Mental Health in America. (2021). *The mental health of healthcare workers in COVID-19*. <https://mhanational.org/mental-health-healthcare-workers-covid-19>

- Morales-Rodrigues, F., Perez-Marmol, J., & Brown, T. (2019). Educational burnout and engagement in occupational therapy undergraduate students and its associated factors. *Frontiers in Psychology*, 10, 2889. <https://doi.org/10.3389/fpsyg.2019.02889>
- Morgan, M. V. (2021). Promoting student wellness and self-care during COVID 19: The role of institutional wellness. *Frontiers in Psychiatry*, 12(797355), 1-4. <https://doi.org/10.3389/fpsyg.2021.797355>
- Motz, B. A., Quick, J. D., Wernert, J. A., & Miles, T. A. (2021). A pandemic of busywork: Increased online coursework following the transition to remote instruction is associated with reduced academic achievement. *Online Learning*, 25(1), 70-85. <https://doi.org/10.24059/olj.v25i1.2475>
- Naser, A. Y., Dahmash, E. Z., Al-Rousan, R., Alwafi, H., Alrawashdeh, H. M., Ghoul, I., Abidine, A., Bokhary, M. A., Al-Hadithi, H. T., Ali, D., Abuthawabeh, R., Abdelwahab, G. M., Alhartani, Y. J., Al Muhaisen, H., Dagash, A., & Alyami, H. S. (2020). Mental health status of the general population, healthcare professionals, and university students during 2019 coronavirus disease outbreak in Jordan: A cross-sectional study. *Brain and Behavior*, 10(8), e01730. <https://doi.org/10.1002/brb3.1730>
- Portney, L., & Watkins, M. (1993). *Foundations of clinical research: Applications to practice*. Appleton & Lange.
- Portney, L., & Watkins, M., (2009). *Foundations of clinical research: Applications to practice* (3rd ed.). Pearson Education.
- Rasmussen, B., Hutchinson, A., Lowe, G., Wynter, K., Redley, B., Holton, S., Manias, E., Phillips, N., McDonall, J., McTier, L., & Kerr, D. (2022). The impact of Covid-19 on psychosocial well-being and learning for Australian nursing and midwifery undergraduate students: A cross-sectional survey. *Nurse Education in Practice*, 58, 1-9. <https://doi.org/10.1016/j.nepr.2021.103275>
- Rehman, U., Shahnawaz, M. G., Khan, N. H., Kharshiing, K. D., Khursheed, M., Gupta, K., Kashyap, D., & Uniyal, R. (2021). Depression, anxiety and stress among Indians in times of Covid-19 lockdown. *Community Mental Health Journal*, 57(1), 42-48. <https://doi.org/10.1007/s10597-020-00664-x>
- Reinhart, A., Malzkorn, B., Döing, C., Beyer, I., Jünger, J., & Bosse, H. M. (2021). Undergraduate medical education amid COVID-19: A qualitative analysis of enablers and barriers to acquiring competencies in distant learning using focus groups. *Medical Education Online*, 26(1), 1940765. <https://doi.org/10.1080/10872981.2021.1940765>
- Rodríguez-Fernández, P., González-Santos, J., Santamaría-Peláez, M., Soto-Cámara, R., & González-Bernal, J. J. (2021). Exploring the occupational balance of young adults during social distancing measures in the COVID-19 pandemic. *International Journal of Environmental Research and Public Health*, 18(11), 1-9. <https://doi.org/10.3390/ijerph18115809>
- Son, C., Hegde, S., Smith, A., Wang, X., & Sasangohar, F. (2020). Effects of COVID-19 on college students' mental health in the United States: Interview survey study. *Journal of Medical Internet Research*, 22(9), e21279. <https://doi.org/10.2196/21279>

- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2, 53-55. <https://doi.org/10.5116/ijme.4dfb.8dfd>
- Taylor, R. (2017). Deciding on an approach to data analysis. In R. Taylor's (Ed.), *Kielhofner's research in occupational therapy: Methods of inquiry for enhancing practice* (2nd ed., pp. 330-341). FA Davis.
- Thomas, S. E., Haney, M. K., Pelic, C. M., Shaw, D., & Wong, J. G. (2011). Developing a program to promote stress resilience and self-care in first-year medical students. *Canadian Medical Education Journal*, 2(1), e32-e36. <https://doi.org/10.36834/cmej.36548>
- Wells, E., Adams, B., & Wheeler, L. G. (2021). The impact of trauma on graduate occupational therapy students: Trauma-Informed implications for educators. *Journal of Occupational Therapy Education*, 5(4), 1-14. <https://doi.org/10.26681/jote.2021.050403>
- Whitney, R.V., & Walsh, W.E. (2020). Occupational therapy's role in times of disaster: Addressing periods of occupational disruption. *OT Practice*, 25(5), 1-8. <https://www.aota.org/-/media/Corporate/Files/Publications/CE-Articles/CE-Article-May-2020.pdf>
- Wilcock, A. A. (1999). Reflections on doing, being and becoming*. *Australian Occupational Therapy Journal*, 46(1), 1-11.
- World Federation of Occupational Therapists. (2020, March 17). *Public statement on occupational therapy response to the COVID-19 pandemic*. <https://wfot.org/assets/resources/WFOT-Public-Statement-Occupational-Therapy-Response-to-the-COVID-19-Pandemic.pdf>
- World Health Organization. (2022, June 8). *Fact sheet: Mental disorders*. <https://www.who.int/news-room/fact-sheets/detail/mental-disorders>

Appendix
Demographics for OT and OTA Students

	Which type of OT or OTA program are you enrolled in?				
	OT – Master’s	OT – Entry-level Doctorate	OTA – Associate	OTA – Bachelor’s	Total N %
What academic year are you in?					
1st year undergraduate	4	5	27	1	37 8.1%
2nd year undergraduate	10	4	66	2	82 17.9%
3rd year undergraduate	11	0	10	1	22 4.8%
4th year undergraduate	5	0	6	1	12 2.6%
1st year graduate	62	54	5	1	122 26.7%
2nd year graduate	61	48	5	0	114 24.9%
3rd year graduate	16	48	0	0	64 14.0%
4th year graduate	2	2	0	0	4 0.9%
Are you currently on Level I or Level II Fieldwork?					
Yes	74	86	88	5	253 55.4%
No	97	75	31	1	204 44.6%

If you answered yes to the previous question, please indicate if you are currently on Level I or Level II Fieldwork.					
Level I Fieldwork	57	78	44	3	182 68.2%
Level II Fieldwork	24	11	48	2	85 31.8%
What is your current age?					
18 – 24	102	97	63	4	266 58.2%
25 – 34	63	60	34	1	158 34.6%
Above 35	6	4	22	1	33 7.2%
Prefer not to answer	0	0	0	0	0 0.0%
What is your gender?					
Male	11	9	8	1	29 6.3%
Female	159	147	110	5	421 92.1%
Trans-gender male	0	1	1	0	2 0.4%
Trans-gender female	0	0	0	0	0 0.0%
Non-binary	1	4	0	0	5 1.1%
Prefer not to answer	0	0	0	0	0 0.0%
Other	0	0	0	0	0 0.0%

What is your race/ethnicity? Check all that apply.					
African American or Black	13	8	12	0	33 7.2%
American Indian or Alaska Native	0	1	1	0	2 0.4%
Asian American or Asian	8	7	7	0	22 4.8%
Hispanic or Latinx	18	7	14	0	39 8.5%
Middle Eastern or North African	1	1	1	0	3 0.7%
Pacific Islander	1	1	0	0	2 0.4%
White or Caucasian	140	141	90	6	377 82.5%
Prefer not to answer	2	2	1	0	5 1.1%
Other	1	1	0	0	2 0.4%
What is your marital status?					
Single, never married	135	137	82	4	358 78.3%
Divorced	0	1	6	0	7 1.5%
Separated	0	0	2	0	2 0.4%
Married or cohabitating	33	19	26	2	80 17.5%
Widow or widower	0	0	0	0	0 0.0%

Prefer not to answer	0	0	1	0	1 0.2%
Other	3	4	2	0	9 2.0%
What is your current employment status? Check all that apply.					
Employed full-time	11	1	11	0	23 5.0%
Employed part-time	85	57	51	2	195 42.7%
Self-employed	10	2	6	0	18 3.9%
Unemployed	15	18	20	1	54 11.8%
Under-employed (my wage is below industry standard)	4	3	2	0	9 2.0%
Student	135	146	87	5	373 81.6%
Unable to work	2	2	3	0	7 1.5%
Prefer not to answer	0	0	0	0	0 0.0%
Other	5	6	2	0	13 2.8%