

Disruptions in the management and care of university students with preexisting mental health conditions during the COVID-19 pandemic

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Abstract

Students with preexisting mental health conditions or disabilities may fair worse due to virus mitigation strategies during the COVID-19 pandemic. This study was conducted to understand the experiences of students with preexisting mental health conditions or disabilities at a public university during COVID-19. We examined disruptions in the management of preexisting mental health conditions or disabilities and its impact on psychological well-being. Students were surveyed about their health care experiences during the COVID-19 pandemic between June and September 2020. Linear regressions and mediation analyses were conducted to examine the relationships between disruption to care, mental health self-efficacy, and four psychological well-being outcomes (stress, anxiety, depression, and overall distress). Of the total ($N = 1,082$) study participants, 258 (24%) reported having a preexisting mental health condition(s) or disabilities (81% female; $M_{age} = 23.47$). Of those, 155 (61%) reported that COVID-19 disrupted health care delivery and management of their conditions or disabilities. Of those who reported this disruption, 51% ($n = 109$) of participants reported a disruption in their ability to see a health care professional and 58% ($n = 69$) reported either that they lost care or that the quality of the new telemedicine care was not sufficient. A series of linear regressions revealed significant relationships between disruption to care and the four psychological outcomes. Mediation analyses revealed that depression, stress, anxiety, and overall distress were mediated by self-efficacy in managing mental health. University administrators and health care providers should evaluate the scope of mental health care and telemedicine services for students to help long-term psychological effects of COVID-19.

Keywords

Preexisting conditions, COVID-19, Health care delivery, Health status, University students

INTRODUCTION

The COVID-19 (novel coronavirus disease 2019) pandemic has drastically altered the lives of all Americans, including university students. The abrupt onset of the virus forced universities to close campuses during the spring 2020 semester. As a result, most students moved back home, transitioned to distance-based learning, and lost the face-to-face interpersonal connections and support that they had on campus. Recent studies indicate that the

Implications

Practice: Practitioners should recognize the challenges to accessibility faced by college students and tailor therapeutic strategies to meet individual needs.

Policy: University administrators should alter support methods to allow for a reduction of barriers to care given the pandemic restrictions.

Research: The proposed recommendation to increase self-efficacy in college students to increase confidence in managing a condition should be further explored as a modifiable intervention.

transition to distance-based learning has negative impacts on the psychological well-being of university students, including elevated levels of depression and anxiety [1, 2]. Federal and State preventative recommendations, including social distancing and, when appropriate, quarantine, may have inadvertently impaired students' ability to sufficiently manage their preexisting mental health conditions [3, 4]. State restrictions may have resulted in college students' difficulties accessing one's health care provider, receiving therapies and supports, acquiring medications, and/or engaging in nonmedical activities (i.e., exercise and socialization) to help manage preexisting conditions. Health care providers also transitioned to remote services at this time (i.e., telemedicine), which was a novel experience for providers and patients with its own logistical challenges [5].

The current study directly examines the extent to which COVID-19 has disrupted the management and care of university students with preexisting mental health conditions or disabilities and its impact on well-being. Guided by the Transactional Stress and Coping Theory [6], this study aimed to identify how COVID-19-related disruptions to the management of preexisting mental health conditions or disabilities has impacted the psychological well-being of students and the role of mental health

self-efficacy (personal beliefs in one's capabilities to manage their mental health). Transactional Stress and Coping Theory emphasizes the cognitive and behavioral response that individuals may use to manage a stressor (such as the pandemic) [6]. The attempt to manage this current stressor, using cognitive strategies, such as self-efficacy, is particularly important to college students living with a preexisting mental health condition [6]. Previous studies have shown that self-efficacy may buffer daily stress in this population [7, 8]. It was hypothesized that participants who reported disruptions to the management of their mental health condition or disability would report poorer psychological outcomes than participants who reported no disruption. We predicted that self-efficacy (a modifiable construct) in managing one's mental health conditions or disabilities for those who experienced disruption would mediate this relationship.

METHODS

Recruitment and study procedure

This research is part of a larger, ongoing prospective study investigating university students' experiences, adherence to COVID-19 preventative behaviors, and general well-being during the COVID-19 pandemic. Participants for the larger study were recruited from the University of Connecticut between June 2020 and September 2020, which coincides with University of Connecticut Phase 2 and 3 reopening plans as well as the State executive order requiring masks or cloth face coverings when in public, and a 6 feet distance is unavoidable. Eligibility at the time of enrollment required participants to (a) be 18 years of age, (b) be a current or incoming undergraduate, graduate student, or postdoctoral associate, and (c) provide consent.

Included in these analyses are participants who responded "Yes" to the question, "Within the past year, have you seen a health care professional (e.g., therapist, counselor, psychiatrist, psychologist, or other health care professional) to help you deal with a mental health problem or disability that you have?" The analytic sample of 258 students in the current study represents 24% of the total participant population from the larger study ($N = 1,082$).

Participant recruitment occurred via university-broadcast listservs and university-branded social media accounts, such as Facebook, Instagram, and Twitter. Individuals who were interested in the study were directed to the online Research Electronic Data Capture screening form and, if eligible, baseline survey [9, 10]. Participants who completed the questionnaire entered a raffle to win a \$100 Amazon gift card. The study was approved by the University of Connecticut Institutional Review Board: L20-0026.

Measures

Demographic characteristics

Participant demographic characteristics, including age, gender identity, race and ethnicity, and undergraduate, graduate student, postdoctoral associate status (class rank) were collected (Table 1).

Mental health conditions and/or disabilities

Participants self-reported the presence of mental health conditions and/or disabilities following the statement, "Below is a list of common mental health conditions and disabilities that have been reported by young adults. Please select any condition(s) that apply to you": (using check boxes). The list was generated based on Centers for Disease Control and Prevention report on the prevalence of mental health conditions in young adults [11]. Participants were also asked "Have you received a formal diagnosis from a health care provider for the most recent condition you selected?" (Response options: "Yes" or "No").

Disruption in management and care

Participants were asked about overall disruption in care by answering, "To what extent has COVID-19 interfered with your ability to manage your health condition?" on a five-point Likert scale: 1 = "No interference," 2 = "A little interference," 3 = "Somewhat interfered," 4 = "Mostly interfered," to 5 = "Totally interfered." For data analysis, overall disruption was characterized into a dichotomy of "No" ("No" and "A little") and "Yes" ("Somewhat," "Mostly," and "Totally") to equalize group sizes. Participants were also asked: "Has the COVID-19 pandemic interfered with seeing your health care professional to help manage your health condition?" (Response options: "Yes" or "No"), "Has the COVID-19 pandemic interfered with continuation of mental health counseling or supportive therap(ies)?" (Response options: "Yes, I no longer have care," "Yes, I transferred to online services which are insufficient for care," "No, I transferred to online services which are sufficient for care," or "Not applicable. I do not attend counseling or supportive therap(ies)"), and "Has the COVID-19 pandemic interfered with your ability to obtain prescription medication for your health condition?" (Response options: "Yes," "No," and "Not applicable. I do not take medication for my health condition").

Self-efficacy in managing condition(s)

Mental health self-efficacy was measured using the Mental Health Self-Efficacy scale (MHSE) [8]. This six-item scale asks participants to report how confident they are in their ability to complete tasks with consideration of their conditions or disabilities. The overall MHSE scores were summed (range: 8–40), with higher

Table 1 | Descriptive statistics of participant characteristics

	Undergraduate (N = 175)	Graduate student/ Postdoc (N = 83)
Age (<i>M</i> , <i>SD</i> , range)	(20.8, 2.69, 18–44)	(29, 5.91, 22–55)
Gender	<i>n</i> (%)	<i>n</i> (%)
Male	24 (13.8%)	14 (17.1%)
Female	142 (81.6%)	67 (81.7%)
Nonbinary, gender fluid/refused to answer	8 (4.6%)	0 (N/A)
Race		
White	124 (70.9%)	71 (85.5%)
Black or African American	8 (4.6%)	4 (4.8%)
Asian or Asian Indian	28 (16.0%)	6 (7.2%)
Middle Eastern or North African	6 (3.4%)	1 (1.2%)
American Indian or Alaska Native	3 (1.7%)	0 (N/A)
Native Hawaiian or Pacific Islander	1 (<1%)	0 (N/A)
Other/refused to answer	4 (2.3%)	0 (N/A)
Ethnicity		
Non-Hispanic/Latino	149 (85.1%)	74 (89.2%)
Hispanic/Latino	26 (14.9%)	9 (10.8%)
Mental health disorder and/or disability		
Anxiety disorder	132 (40%)	61 (42%)
Mood disorder	103 (31%)	40 (12%)
Eating disorder	30 (9%)	10 (3%)
Other/refused to answer	30 (9%)	15 (5%)
Attention deficit hyperactivity disorder	19 (6%)	12 (4%)
Language, learning, or autism spectrum disorder	7 (2%)	1 (<1%)
Alcohol or substance use disorder	6 (2%)	4 (1%)
Personality or psychotic disorder	4 (1%)	3 (1%)
Self-reported disruption (positive responses)		
Do you take medication for your condition?	74 (29%)	46 (18%)
Do you participate in nonpharmaceutical therapies?	74 (29%)	63 (25%)
Has COVID-19 disrupted your care?	110 (43%)	45 (17%)
Has COVID-19 disrupted care from a health professional?	80 (37%)	29 (13%)
Has COVID-19 disrupted access to medication?	13 (9%)	5 (4%)
Has COVID-19 disrupted counseling or supportive therapies?	56 (35%)	13 (8%)
Psychological well-being scores (<i>M</i> , <i>SD</i> , range)		
Depression**	(2.5, 1.04, 1–5)	(1.97, 0.98, 1–5)
Stress**	(3.13, 0.95, 1–5)	(2.6, 0.99, 1–5)
Anxiety	(3.6, 0.97, 1–5)	(3.44, 0.99, 1–5)
Distress**	(9.22, 2.27, 3–15)	(8.03, 2.3, 3–13)
Mental health self-efficacy*	(18.44, 5.4, 6–30)	(20.27, 5.73, 7–30)

SD standard deviation.

** $p < .01$, * $p < .05$.

scores indicating higher levels of self-efficacy. The MHSE demonstrated good overall scale reliability (Cronbach's alpha, $\alpha = 0.84$) in this sample.

Psychological well-being outcomes

Depression, stress, and anxiety were each measured using a single item from the Depression, Anxiety and Stress Scale (DASS-21) [12]. The item with highest factor loading in each of the three DASS-21 subscales [13] was selected to reduce participant burden. Stress

was measured using the statement, "I found myself getting upset by quite trivial things," depression was measured using the question, "I could see nothing to be hopeful about," and anxiety was measured using the question, "I was anxious." The original five-point Likert scale was maintained ranging from 5 ("All the time") to 1 ("Never"), with higher scores indicating higher levels of that construct. These three psychological items were examined separately and summed to generate a total measure of overall distress (range: 3–15).

Analytical strategy

SPSS version 27 was used to run all analyses. Pearson's correlation, *t*-tests, and analysis of variance were generated to characterize the relationships between COVID-19 disruption variables, anxiety, depression, stress, overall distress, and self-efficacy. A *p*-value of .05 was selected a priori to establish statistical significance for all tests. Linear regressions were run on the independent variables focused on overall disruption (yes or no) and dependent variables (anxiety, stress, depression, and overall distress). Mediation analyses were conducted using the PROCESS Macro for SPSS and with bootstrap procedures (with 5,000 bootstrap samples) [14]. Disruption was entered as the independent variable and self-efficacy as the mediator in four models with the dependent variables: depression, anxiety, stress, and overall distress.

RESULTS

Sample characteristics

Participants who reported seeing a health care professional for a mental health condition and/or disability within the past year ($n = 258$) were predominately female ($n = 209$, 81%) and, on average, 23 years old (standard deviation = 5.44). See Table 1 for additional sample characteristics.

Mental health condition and/or disability characteristics

The most common self-reported condition among students was anxiety disorder ($n = 193$, 75%) followed by mood disorders ($n = 143$, 55%). Seventy-two percent of students reported receiving a formal diagnosis for their condition ($n = 181$). The majority (57%; $n = 147$) of the sample reported having two or more coexisting mental health conditions or disabilities and 47% ($n = 120$) take medication to help them manage their condition.

Disruption to health care delivery

The majority (61%; $n = 155$) of participants reported that the pandemic had disrupted the management of their condition (Table 1). This result did not differ between class ranks. Of the participants that reported disruption to care, 51% ($n = 109$) reported

disruption with seeing their health care professional because of COVID-19. Of our participants, 14% ($n = 22$) reported that they lost their care completely and 30% ($n = 47$) perceived the new telemedicine services as insufficient for continuing care. Sixteen percent ($n = 16$) of the participants that take medication for their condition reported disruption due to COVID-19.

Differences in psychological well-being by overall disruption and self-efficacy

There were statistically significant differences on the mean scores of our dependent variables (depression, stress, distress, and self-efficacy) between class ranks; however, anxiety did not show a statistically significant difference (Table 1). Across all participants, independent linear regressions indicated that overall disruption was significantly associated with the four psychological well-being outcomes: depression $F(1,256) = 37.483$, $p < .001$; stress $F(1,256) = 17.406$, $p < .001$; anxiety $F(1,255) = 19.662$, $p < .001$; and distress $F(1,256) = 25.665$, $p < .001$.

Reporting overall disruption significantly predicted mental health self-efficacy ($b = -2.94$, $t = -4.27$, $R^2 = .07$, $p < .001$), indicating that the negative impact of disruption on psychological well-being was significantly reduced in those with higher self-efficacy. There was a significant indirect effect of overall disruption on all outcome variables, indicating mediation of self-efficacy on each psychological outcome (Table 2); that is, individuals who experienced overall disruption and reported higher levels of self-efficacy conversely reported lower levels of each psychological outcome. Our models also adjusted for the effect of having multiple mental health conditions and/or disabilities, class rank (undergraduate or above) and age; however, these models did not reveal significant results adding these covariates.

DISCUSSION

Overall, two-thirds of our sample of undergraduate, graduate student, and postdoctoral students reported that COVID-19 has disrupted the management of their preexisting mental health condition(s) and/or disability(ies), including reduced access to and quality of health care services.

Table 2 | Estimated coefficients for mediation model of service disruption and mental health self-efficacy on psychological outcomes

	Total effect			Direct effect			Indirect effect		
	c	SE	95% CI	c'	SE	95% CI	ab	SE	95% CI
Depression	0.59**	0.13	0.33, 0.85	0.27*	0.11	0.05, 0.49	0.32	0.08	0.17, 0.48
Stress	0.51**	0.12	0.27, 0.76	0.30**	0.11	0.07, 0.53	0.21	0.06	0.11, 0.34
Anxiety	0.61**	0.12	0.38, 0.85	0.41**	0.11	0.18, 0.63	0.21	0.06	0.10, 0.33
Distress	1.73**	0.28	1.18, 2.29	0.99**	0.23	0.54, 1.44	0.75	0.18	0.41, 1.12

95% CI confidence interval at the 95 percentile; ab indirect effect; c total effect; c' direct effect; SE standard error.

** $p < .01$, * $p < .05$.

The most common conditions reported among college students in our sample were anxiety and mood disorders, but, strikingly, 57% of the sample reported the presence of two or more coexisting mental health conditions. In addition, our research suggests that self-efficacy mediated each of the psychological outcomes (anxiety, stress, depression, and overall distress) associated with overall disruption to care, offering avenues for intervention.

To our knowledge, this is the first study to examine disruption in mental health care due to COVID-19. Health professionals need to be aware that some university students may perceive telemedicine as inadequate to managing their care. A recent study found specific barriers to the telemedicine encounter, including patient access (connectivity issues), inadequate technological support, or feelings of mistrust or impersonality [15]. Thus, mental health professionals and health care centers providing these services should focus on creating a robust telehealth system addressing these barriers during this pandemic and for future health care emergencies. Additionally, 16% of college students who take medicine to manage their condition had trouble accessing their medication. Creating clear avenues for medication access, including home delivery services, may be particularly useful during this pandemic and for future health crises.

Our findings suggest that self-efficacy could serve as a protective factor for those with a preexisting condition against poorer psychological outcomes, attenuating levels of depression, anxiety, and stress among university students. Because self-efficacy may mediate the relationship between health information processing and the management of health conditions during a public health crisis, such as COVID-19, university programs and mental health providers should consider including self-efficacy skill building as part of their care and support for students with preexisting mental health conditions [8, 16].

It is important for health care providers and college administrators to consider the potential stressors of returning to campus for this population as a distinctive set of stressors may need to be addressed, including reengagement with previous providers and support systems. While class rank was not a significant factor in reports of disruption, graduate students/postdocs showed better psychological outcomes and higher self-efficacy scores. Graduate students/post docs in our sample presented an average 10-year age gap over undergraduate students, which may suggest stronger coping mechanisms. Other research has shown that university students report higher levels of loneliness during COVID-19 [1]. The stress associated with physical distancing, self-quarantine

(when appropriate), and lack of social interaction with peers, faculty, and college administrators may not be immediate and/or may have lasting impacts for months after the mitigation strategies end [17]. Therefore, it is imperative that channels of communication and collaboration remain open among university administrators, instructors, and staff to decrease stigma and increase the disclosure of conditions [18].

The present study has several limitations. The sample was comprised of mostly white female participants, which may be due to our recruitment strategies or the self-selection bias of female students, which is often typical in college survey samples. Future research should incorporate different recruitment strategies to attract a more diverse participant pool, though our sample did reflect 25% of non-Caucasian college students. Underrepresented minority groups have seen the highest transmission rates of COVID-19, which could increase the likelihood of poorer psychosocial outcomes, particularly those with preexisting mental health conditions [19]. This study was part of a larger prospective study, but our analyses were cross-sectional, which is not always ideal to study temporal mediation, but previous longitudinal research has found that self-efficacy mediates psychological outcomes [8]; hence, atemporal mediation analyses were performed [14]. Lastly, since no psychometrically valid measures of disruption to mental health care were available in the literature, the study team created questions for this study.

CONCLUSION

COVID-19 has impacted student's lives in many ways, including the management of mental health conditions or disabilities, as it has disrupted health care visits and medication access and inhibited sufficient continuing care for a subgroup that transitioned to telehealth. Mental health self-efficacy may help protect psychological well-being during stressful life events, such as this pandemic and/or future health crises, when care is disrupted. Thus, mental health self-efficacy may be an important target of intervention as universities and mental health professionals adapt services both on and off campus to support students. Because it remains unclear when the pandemic and its mitigation restrictions will end, universities should enact strong proactive measures to support students with preexisting mental health conditions as well as for the larger university community. Considering the study findings, self-efficacy skills should be taught to university students to buffer the harmful effects of disruption to care. Furthermore, a focus on improving the quality of telemedicine to meet the needs of all students seeking care as the stress associated with the pandemic could last throughout students' tenure.

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Compliance with Ethical Standards

Conflicts of Interest: The authors declare that they have no conflicts of interest.

Author Contributions: All authors were involved in the development of research questions. Kaleigh Ligus completed the data analysis. Emily Fritzon contributed to authoring the tables. All authors contributed to the interpretation of data analysis.

Ethical Approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

Informed Consent: Informed consent was obtained from all individual participants included in the study.

Transparency Statement: This study was not formally registered. The analysis plan was not formally preregistered. Deidentified data from this study are not available in a public archive. Deidentified data from this study will be made available (as allowable according to institutional review board standards) by emailing the corresponding author. Analytic code used to conduct the analyses presented in this study are not available in a public archive. They may be available by emailing the corresponding author. Materials used to conduct the study are not publicly available.

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