

Predictors of Mental Health Help-Seeking During COVID-19: Social Support, Emotion Regulation, and Mental Health Symptoms



Rachel R. Tambling PhD

Beth S. Russell PhD

Michael Fendrich PhD

Crystal L. Park PhD

Abstract

Little is known about factors that contribute to mental health help-seeking during disasters beyond attitudes toward counseling. The COVID-19 (SARS-CoV-2) global pandemic dramatically impacted individuals, families, and communities worldwide. The pandemic led to significant disruptions to family routines, and evidence suggests an increase in instances of mental health symptoms, like depression and anxiety, and poor utilization of mental health services. To better understand psychological factors associated with help-seeking during the COVID-19 pandemic, researchers surveyed respondents ($n=1,533$ at time 1) about their mental health and help-seeking using Amazon's MTurk platform. The results indicated that individuals with higher levels of anxiety rate their likelihood of help-seeking as higher and those who do seek psychological help report higher levels of depression. Further, those who began new treatment for behavioral health difficulties during the COVID-19 pandemic reported lower social support and less clarity about how they felt (specifically, emotional clarity when upset). Implications for clinical researchers and public health are discussed.

Keywords Help-seeking · Behavioral health · Mental health · Emotion regulation · Social support

Address correspondence to Rachel R. Tambling, Department of Human Development and Family Sciences, University of Connecticut, Storrs, CT, USA. Rachel.tambling@uconn.edu.

Address correspondence to Beth S. Russell, Department of Human Development and Family Sciences, University of Connecticut, Storrs, CT, USA. Rachel.tambling@uconn.edu.

Michael Fendrich, School of Social Work, University of Connecticut, Storrs, CT, USA.

Crystal L. Park, Department of Psychological Sciences, University of Connecticut, Storrs, CT, USA.

The Journal of Behavioral Health Services & Research, 2023, 68–79. © 2022, National Council for Mental Wellbeing. DOI 10.1007/s11414-022-09796-2

Introduction

Depression and anxiety are commonly occurring mental health disorders that can have deleterious impacts on individuals, families, and communities. With lifetime prevalence rates of 17% for depression and 29% for anxiety disorders, they are the most common psychological disorders.^{1,2} Despite their prevalence, few seek professional help for anxiety or depression: As many as 70% of individuals with depression or anxiety do not receive any mental health treatment,³ and evidence indicates concerning patterns of low service engagement during the COVID-19 pandemic.^{4,5} It is clear that professional help, including psychotherapy, is useful in reducing the harms associated with depression and anxiety.⁶ Barriers to help-seeking can be particularly challenging for individuals experiencing depression and anxiety, especially in times of trauma and mass disaster.

Relatively little is known about factors that contribute to mental health help-seeking in community samples during disasters. Help-seeking research following disasters is often conducted retrospectively among those engaged in counseling services after the event or addresses help-seeking within particular diagnostic categories, such as posttraumatic stress disorder. Identifying patterns of help-seeking behaviors among community members, particularly factors that are related to aspects of the presenting problem itself (e.g., severity of symptoms), is critical. Understanding help-seeking practices is particularly useful in times of disaster, when large groups of individuals are at risk for poor mental health outcomes.⁷⁻⁹ The present study provides information about predictors of mental health help-seeking during the COVID-19 (SARS-CoV-2) global pandemic in the USA.

Mental Health Impact of the COVID-19 Pandemic

The COVID-19 (SARS-CoV-2) global pandemic dramatically impacted individuals, families, and communities worldwide. In the USA, the pandemic led to significant disruptions to work, leisure, and family routines.¹⁰⁻¹² In 2020, efforts to stop the spread of COVID-19 in the USA led to stay-at-home orders, school closures, cancellation of activities, widespread quarantine, and disruptions of family routines. The pandemic—and associated disruptions to daily routines—may lead to the development of new psychiatric problems^{7,11} or the worsening of existing mental health difficulties.¹³

Longitudinal research suggests that these impacts on mental health may be felt over time and can increase in intensity for some.¹⁴ Evidence from an Italian sample suggests adverse effects on mental health, particularly for those in quarantine.¹⁵ Mental health symptoms experienced following a range of disasters include anxiety and depression.¹⁶⁻¹⁹ Early research on stressors related to the COVID-19 pandemic indicate adverse psychological consequences for individuals and families^{10,20,21} including depression, anxiety, and feelings of disconnection and caregiving burden.^{13,14,22} Some evidence suggests that mental health impacts of the COVID-19 pandemic might include worsening of existing mental health problems,¹³ or the development of new problems,¹⁴ and that strict quarantine restrictions might worsen symptoms.^{22,23} These experiences may lead to the increased need to engage professional mental health supports as a valuable resource for mitigating the strains that develop during the pandemic.

The disruptions wrought by COVID-19 meant that people lost familiar and otherwise easy access to their social support networks, including clinical supports like behavioral health services. Throughout the first year of the pandemic, a pattern of disorganized COVID-19 response policies fostered deep uncertainty in whether and for how long people would need to stay physically distant from their support communities to stem the spread of the virus.¹¹ This ambiguity in the nature and duration of the quarantines and other disruptions to daily life required rapid, and constant, adjustments to the ways in which individuals access their familiar protective resources for adapting to challenging circumstances.^{24,25} One of the most deleterious impacts of the disruptions to daily life was the impact

on social support. Quarantine orders limited the movement of individuals and families and resulted in the disruption of typical routines for engaging in social support including clinical services.

Mental health help-seeking

Help-seeking behavior is impacted by many factors, and barriers to the treatment seeking process have been extensively researched. In this instance, we refer to mental health help-seeking as the process by which one seeks support, input, and treatment from a clinical provider, such as a therapist, doctor, or other health professional. Barriers to help-seeking can be practical, attitudinal, intrapsychic, and/or clinic-related.²⁶ Typically cited barriers include structural barriers, poor mental health literacy, and stigma associated with mental health disorders.²⁷ In particular, internalized negative attitudes toward help-seeking can serve as a barrier to treatment seeking.²⁸

For members of marginalized groups, perceptions of mental health care providers, including lack of trust in the mental health treatment system and negative past experiences, may influence treatment seeking.²⁹⁻³¹ In addition, concerns about confidentiality³² can influence help-seeking behaviors. In particular, help-seeking for depression and anxiety has been shown to be related to systematic racism³³ and gender disparities.³⁴ Some²⁶ have suggested that many identified barriers to treatment seeking are associated with, or the direct result of, social determinants of health.

Attitudes that question whether depression and anxiety are conditions worthy of medical intervention are common³⁵⁻³⁷ and may be exacerbated during times of mass trauma or disaster when distress is widespread and might be perceived as normal and the need for assistance minimized. Despite substantial research on help-seeking in general, relatively little is known about help-seeking behaviors in times of mass trauma.

Trauma exposure, including that related to widespread disasters, is associated with higher rates of anxiety and depression³⁸⁻⁴⁰ but with lower rates of mental health service utilization.⁴¹⁻⁴³ It is clear that the many changes associated with widespread disasters can trigger anxiety and depression, yet few individuals actively seek professional help following a disaster, and little is known about factors that influence that process.

Coping with disruption: emotion regulation, social support, and mindfulness

Given the pervasive nature of the pandemic, and the intensity of disruptions to daily life, social scientists have focused tremendous research attention on how people adapt over time, with particular focus on the stresses associated with loss of social support. Regulating stress, including the loneliness associated with a loss of social support and the restrictions in movement associated with quarantine, may be accomplished by drawing on trait-like predispositions to specific ways of regulating emotion (e.g., mindfulness)⁴⁴ or on stress-regulating coping strategies.⁴⁵ More adaptive emotion regulation skills may include having awareness and clarity regarding one's difficult emotions and access to effective strategies to manage them, including first an awareness of one's emotions as well as the related ability to clearly articulate what those feelings are.

These skills enable a larger set of creative responses to challenges.^{46,47} For example, several recent studies indicate that mindfulness is significantly linked to perceptions of social support,⁴⁸ underscoring the importance of understanding the interpersonal benefits of mindful emotion regulation. One study of over 150 adults sampled from the community demonstrated significant reductions in loneliness and improvements in perceived social support after participating in a brief mindfulness intervention.⁴⁹ Similarly, there is evidence that dispositional mindfulness is associated with a perceived social connection through effective emotion regulation,⁵⁰ including those skills needed to attend to emotions with clarity and without self-criticism and then respond using strategies to manage distressing feelings that are flexible rather than rote or impulsive.⁵¹

While preliminary evidence suggests mindfulness and social support are linked, their potential impact on mental health symptoms during the first 12 months of the COVID-19 pandemic is unclear. Further, there are unanswered pertinent questions about whether and how disruptions in social support, mental health symptoms, and emotion regulation factors are related to subsequent patterns of help-seeking during the pandemic.

Summary and research questions

It is clear that there are important gaps between mental health needs and treatment seeking, yet the factors influencing help-seeking during disasters and mass trauma remain largely unidentified. In particular, the extent to which mental health symptoms, social support, and emotion regulation contribute to help-seeking behaviors is unknown. To better understand these psychological factors associated with help-seeking during the COVID-19 pandemic, the following research questions were addressed in this exploratory study:

1. Were social support, emotion regulation, mental health symptoms, and demographic factors associated with help-seeking during the COVID-19 pandemic?
2. Were social support, emotion regulation, mental health symptoms, and demographic factors associated with having sought new mental health treatment during the COVID-19 pandemic?

Methods

Data collection and cleaning procedures

Study materials were approved by the University of Connecticut IRB (X20-0057). Data were collected through a national, online survey posted through the MTurk online worker platform between April 7 and 14, 2020—during the first 7-day average peak of new COVID-19 cases in the USA⁵² and 60 days later. MTurk studies have produced data that is replicable and valid, demonstrating the utility of this platform for psychosocial and health-focused studies.⁵³ MTurk participants reviewed the study description before following the study-specific link to provide consent and then completed the study's survey (average duration to completion was 20 min).

Participants received a \$2 incentive upon completion of the baseline survey and \$3 for each follow-up survey. Given the vulnerabilities inherent in crowd-sourced convenience samples,⁵⁴ rigorous data management practices were followed to verify the inclusion of unique individual human respondent cases, as opposed to computerized bot responses, and the attentiveness of each response.⁵⁵ First, we screened the dataset for duplicate cases and global positioning verification within the USA. Next, responses completed in under 10 min were deleted (<50% of the pilot estimates for expected survey length). Last, a Captcha attention screener and an attention check item were also included in the 60-day follow-up survey.

Participants

At baseline, 1,545 English-speaking individuals over the age of 18 who resided in the USA participated (55.6% females, 68.1% White non-Hispanic; mean age = 35.6, *SD* = 13.3 years). Of these, 812 (52.6%) participated in the 60-day follow-up, in line with expected retention rates for longitudinal MTurk studies.

Measures

In addition to reporting background and demographic characteristics including age, gender, race and ethnic background, financial resources available to meet participant needs, and education level, participants completed the following measures:

Predictor: depression, anxiety, and stress symptoms

Depression, anxiety, and stress were assessed with the Depression Anxiety and Stress Scales 21 (DASS21).⁵⁶ The DASS-21 demonstrated good psychometric properties in similar samples to the present study including samples during COVID-19⁵⁷ as well as in MTurk samples.⁵⁸ The measure has acceptable internal consistency with $\alpha = 0.92$ for depression, 0.89 for anxiety, and 0.90 for stress in the present sample. Example items for these subscales include “I felt life was meaningless,” “I felt close to panic,” and “I felt I was rather touchy,” respectively.

The DASS-21 is not appropriate for clinical diagnoses; however, data from the larger, 42-item scale⁵⁹ have led to the development of benchmarks to aid interpretation as follows: depression scores from 10–12 indicate mild, 13–20 indicate moderate, 21–27 indicate severe, and 28 indicate extreme symptom severity. Anxiety scores from 7–9 indicate mild, 10–14 indicate moderate, 15–19 indicate severe, and 20–42 indicate extreme symptom severity. Stress scores from 11–18 indicate mild, 19–26 indicate moderate, 27–34 indicate severe, and 35–42 indicate extreme symptom severity. Scores from the shorter version subscales used in the present study can be multiplied by a factor of 2 to provide a reasonable comparison to these benchmarks.

Predictor: emotion regulation

Participants completed the Difficulties in Emotion Regulation Scale-Short Form (DERS-SF),⁶⁰ which assesses the presence of difficulties regulating emotion across 6 subscales (all $\alpha > 0.78$).⁶⁰ Higher scores indicate more severe struggles with regulating distress; the current study includes 3 DERS-SF subscales for a total of 9 items, including clarity with 3 items including “I have difficulty making sense out my of feelings”; strategies with 3 items including “When I’m upset, I believe there is nothing I can do to feel better”; and impulse with 3 items including “When I’m upset, I become out of control.”⁶⁰

Predictor: social support

Participants completed the 4-item appraisal support subscale of the Interpersonal Support Evaluation List (ISEL- SF).⁶¹ These items measure respondents’ perceptions that there is someone available with whom they can discuss personal issues, such that higher scores indicated greater perceived availability of social support. The ISEL-SF has demonstrated adequate internal consistency, reported at $\alpha = 0.83$.⁶² The appraisal subscale also has acceptable internal consistency in the current sample with $\alpha = 0.86$. An example item from this subscale includes “There are several people that I trust to help solve my problems.”

Predictor: mindfulness

Participants completed the 12-item Cognitive and Affective Mindfulness Scale-Revised (CAMS-R),⁶³ which captures trait mindfulness and is designed to be free of idiomatic language, suitable for use in non-meditating samples. Higher scores indicate more mindfulness. The measure has acceptable reported internal consistency ($\alpha > 0.74$) and convergent and discriminant validity.⁶³ The

CAMS-R demonstrated acceptable internal consistency in the current sample with $\alpha = 0.88$. An example item from the scale includes “I am preoccupied by the past.”

Dependent variable: single-item help-seeking indicators

Our outcomes measures on help-seeking from the 60-day follow-up included three single-item indicators: “Have you sought counseling or other professional mental health during the COVID-19 pandemic?” and “Did you seek new supports or were you already receiving these services when the COVID-19 pandemic started?”. Propensity to seek psychological help was a single item, worded “How likely are you personally to seek professional help to manage stress or anxiety during COVID-19?”. Respondents rated this item on a 100-point slider.

Results

Overall, researchers sought to determine which factors were associated with help-seeking generally and which factors were associated with having sought new help. To do so, a series of binary logistic and linear regressions were conducted using SPSS 27. Three separate regression equations were built, one for each of the three single item help-seeking indicators (noted in the section above) reflecting having sought help, having sought new help during the pandemic beyond services previously underway, and propensity to seek help. In total, 77 individuals (5.0% of the total sample) reported seeking help, while 23 (1.5% of the total sample) reported pursuing new supports since the pandemic began. Scores on the scale measure of propensity toward help-seeking were, on average, 19.08 ($SD = 28.16$).

To get a sense of the data as a whole, descriptive statistics are provided. Average scores for depression, anxiety, and stress symptoms in this sample were 10.86 ($SD = 10.98$), 6.81 ($SD = 8.77$), and 11.61 ($SD = 10.02$), respectively. Scores on the additional predictor assessments for emotion regulation were $M_{clarity} = 5.56$ ($SD = 2.88$), $M_{Strategies} = 6.49$ ($SD = 2.99$), and $M_{Impulse} = 6.19$ ($SD = 2.91$); social support $M = 8.74$ ($SD = 3.19$); and mindfulness were 28.43 ($SD = 5.88$).

To gather information about the research questions, researchers sought to understand which of the predictors (mental health symptoms: depression, anxiety, stress; social support; emotion regulation difficulties: clarity, strategies, impulse; and dispositional mindfulness) were associated with an affirmative report of having sought help during the COVID-19 pandemic. Given that gender is often a powerful predictor of counseling initiation, it was included in the model. Other social determinants of health, including race, having sufficient financial resources to meet one’s needs, and education, were also included in the model. Forward entry, binary logistic regression model was estimated for the binary outcome variables, and regression equations were built for the continuous outcome variables. The included demographic variables were not statistically significant predictors in any model and were consequently removed from the final models.

The results of a binary logistic regression predicting membership in one of two categories of having sought help at 60-day follow-up indicated that among the predictors, depression, anxiety, and gender were significant. See Table 1 for information about these predictors. The R^2 for this model is 0.248. Given that gender was a significant predictor, the authors conducted a Chi-square test to confirm the direction of effect, which was significant [$\chi^2(5) = 23.36, p < 0.01$]. The results indicated that women were more likely to have sought help than their male counterparts; examination of the crosstabs table confirmed this effect. No other demographic characteristics were significant in the model (i.e., race/ethnicity, financial resources available to meet needs, or education).

Next, researchers sought to understand which of the predictors were associated with having sought *new* behavioral health services during the COVID-19 pandemic at 60-day follow-up. A

Table 1

Predictors of help-seeking at 60 days ($n = 812$; $R^2 = 0.248$)

Predictor	β	SE	p	Exp (B)
DASS depression	0.060	0.014	0.000	1.062
DASS anxiety	0.061	0.016	0.000	1.063
Gender	0.435	0.177	0.014	1.545
DASS stress			ns	
ISEL social support			ns	
DERS clarity			ns	
DERS strategies			ns	
DERS impulse			ns	
CAMS-R mindfulness			ns	
Race/ethnicity			ns	
Financial resources available to meet needs			ns	
Education			ns	

forward entry, binary logistic regression was estimated, using the same set of predictors. The results suggested that depression and anxiety were significant predictors of new help-seeking, as well as a lack of emotional clarity and social support. The results suggested that seeking new help during the COVID-19 pandemic is associated with lower depression, but higher anxiety, and fewer social supports. Table 2 provides a summary of the model; the R^2 is 0.507.

Finally, the researchers sought to understand respondents' ratings of propensity to seek help. A regression equation was estimated using the predictors, with the continuous rating of the likelihood of help-seeking as an outcome variable. The results suggested that only scores on the DASS anxiety subscale were significant [$\beta = 1.232$, $SE = 0.186$, $p < 0.001$, 95% $CI = (0.867-1.597)$].

Table 2

Predictors of having sought new help at 60 days ($n = 812$; $R^2 = 0.507$)

Predictor	β	SE	p	Exp(B)
DASS depression	-0.202	0.056	0.000	0.817
DASS anxiety	0.120	0.046	0.008	1.128
DERS clarity	0.586	0.164	0.000	1.797
ISEL	-0.225	0.112	0.045	0.798
DASS stress			ns	
DERS strategies			ns	
DERS impulse			ns	
CAMS-R mindfulness			ns	
Gender			ns	
Race/ethnicity			ns	
Financial resources available to meet needs			ns	
Education			ns	

Discussion

Descriptive results from this sample suggest comparably elevated levels of mental health symptoms and lower levels of available inter- and intrapersonal resources to leverage for coping with these strains. Based on scoring for the DASS-21,⁵⁹ depression scores for this sample at baseline in early April 2020 fell within the range described as mild symptoms (scores ranging from 10 to 12) while anxiety scores fell in the normal range (scores lower than 10). These averages are comparable or higher than those reported by other adult samples on the same measure while facing similar quarantine-like conditions during the COVID-19 pandemic.^{64,65} Unfortunately, we have no information about the mental health of the sample prior to the onset of the COVID-19 pandemic and cannot estimate whether these scores represent new or worsening mental health disorders.

Average scores of perceived available social support and emotion regulation skills were lower for these participants than reported in other studies during the pandemic.^{66,67} The results from 431,656 national surveys collected through a collaboration between the US Census Bureau, the CDC's National Center for Health Statistics (NCHS), and several other federal statistical agencies between August 2020 and February 2021 suggest the prevalence of those with unmet mental health needs rose significantly over the 6-month period.⁶⁸ Taken together, there is evidence this sample experienced noteworthy distress early in the pandemic, such that examinations of help-seeking for mental health symptoms during this timeframe were reasonable and warranted.

These results suggest that, while individuals with higher levels of anxiety rate their likelihood of help-seeking as higher, those who do seek psychological help are often experiencing higher levels of depression. Further, those who began new treatment for behavioral health difficulties during the COVID-19 pandemic reported lower social support and lower emotional clarity, specifically reporting difficulties articulating clearly how they felt when upset.

The results also indicated that women were more likely to seek psychological help, a finding that is consistent with existing literature.³⁴ What is not known from these results is whether there is a direct link between having sought help and experiencing benefits in mental health and well-being during the pandemic. Future studies should examine, prospectively and retrospectively, whether there is a direct association between mental health treatment and positive outcomes during disasters.

The results presented here echo others⁶⁹ that suggest that engagement in behavioral health care is driven by depression, indicating that depression is recognized by the American public as a troublesome experience that merits seeking support from professionals. Interestingly, our results indicate that anxiety scores were the sole significant predictor of help-seeking propensity ("how likely are you personally to seek help..."), despite a lack of significant contribution to models predicting ongoing or new engagement in professional mental health services during the pandemic.

Although also troubling, it is possible that experiences of anxiety have been so normalized during the COVID-19 pandemic that individuals do not think that anxiety alone merits seeking professional help. More work is needed to understand the social attitudes towards anxiety that might lead to normalizing pressures that dampen the felt need for mental health supports to manage the widely reported worry, fear, and uncertainty during the pandemic.

Further, these results point to the importance of social support in new service initiation. More research is needed to understand how patterns of perceived social support were impacted by the social distancing and other quarantine-like conditions that became widespread and evolved over the course of 2020. Some evidence^{70,71} indicates that disruptions to access to familiar patterns of support seeking during the pandemic can negatively impact mental health symptoms.

Limitations and future research

While the results of this study are interesting, the study is not without limitations. First, and most importantly, the COVID-19 pandemic in the USA continues to evolve as this paper was written. The present work represents a snapshot in time during an evolving health crisis. Next, the sample was obtained entirely online, through MTurk, and it is possible that this worker pool is unique in ways that limit generalizability. For example, there is some nascent evidence that MTurk workers may be slightly more depressed than the general population,⁷² though we noted no evidence of this in the current sample.

In addition, the measure of depression and anxiety, the DASS-21, has limited measurement and psychometric evaluation, and while self-reported mental health symptoms might be predictive of clinical diagnosis, scores cannot be taken as a diagnostic measure. Additional measurement considerations for future work might also include other measures of depression and anxiety using repeated measures designs that might better capture subgroup differences across different samples, perhaps by including place-based indicators of stress known to contribute to health and well-being (e.g., availability or access to services by region and other relevant location-based determinants of health—like community-level rates of poverty and employment).

Future studies during widespread crises might also strengthen this field of study by including validated measures of mental health literacy to more reliably assess individuals' abilities to identify troubling mental health symptoms and the resources through which to treat them. Finally, we operationalized mental health help-seeking as the process by which one seeks support, input, and treatment from a clinical provider, such as a therapist, doctor, or other health professional. One can seek help for mental health concerns in innumerable ways and future studies should examine other forms of help-seeking, including lay help and self-help behaviors.

Implications for Behavioral Health

Despite these limitations, the present study provides useful information about the factors associated with mental health help-seeking during the 2020 COVID-19 pandemic. Evidence is mounting that depression and anxiety symptoms were increasing during late 2020, particularly among adults 18–29 years of age and those with less than a high school education.⁶⁸ Evidence from international studies suggests rates of mental health service engagement during the pandemic were low,^{4,5} though some caution is warranted when considering international comparators like the UK, where socialized healthcare shapes the modality and access to services in meaningful ways (e.g., mental health services delivered in a general provider practice or in group settings). Despite these clear trends in increased symptom severity, our results indicate that rates of help-seeking for mental health needs were consistently low across subgroups and were best predicted by depression and poorer inter- and intrapersonal resources to manage distressing emotions (lower social support and emotion regulation skills).

Interestingly, measures of social determinants of health including race, ethnicity, education level, and financial resources available to meet the needs that often explain variance in mental health service utilization were not significant predictors in our models. These findings indicate efforts to raise mental health literacy are warranted across demographic groups, especially during times of enduring widespread stress when access to familiar coping skills may be disrupted for all subgroups. Communities can improve their crisis response planning for future such events by incorporating information and resources about how to mitigate stress when social connections and access to health and community resources are likely to be complicated by public health and safety guidelines to protect the population (e.g., quarantine-like guidance to mitigate the spread of disease).

Funding This research was supported by grants from the University of Connecticut, Institute for Collaboration on Health, Intervention and Policy (InCHIP; 4641650RPF), and National Institute on Alcohol Abuse and Alcoholism (1R34AA027455-01A1) awarded to Co-PIs Park, Russell, and Fendrich.

Declarations

Competing Interests The authors declare no competing interests.

References

1. Kessler RC, Petukhova M, Sampson NA, et al. Twelve-month and lifetime prevalence and lifetime morbid risk of anxiety and mood disorders in the United States. *International Journal of Methods in Psychiatric Research*. 2012;21(3):169-184. <https://doi.org/10.1002/mpr.1359>
2. Kessler RC, Berglund PA, Dewit DJ, et al. Distinguishing generalized anxiety disorder from major depression: Prevalence and impairment from current pure and comorbid disorders in the US and Ontario. *International Journal of Methods in Psychiatric Research*. 2002;11(3):99-111. <https://doi.org/10.1002/mpr.128>
3. Thornicroft G. Most people with mental illness are not treated. *The Lancet*. 2007;370(9590):807-808. [https://doi.org/10.1016/S0140-6736\(07\)61392-0](https://doi.org/10.1016/S0140-6736(07)61392-0)
4. Bu F, Mak HW, Fancourt D. Rates and predictors of uptake of mental health support during the COVID-19 pandemic: An analysis of 26,720 adults in the UK in lockdown. *Social Psychiatry and Psychiatric Epidemiology*. Published online May 18, 2021. <https://doi.org/10.1007/s00127-021-02105-w>
5. Iob E, Frank P, Steptoe A, et al. Levels of severity of depressive symptoms among at-risk groups in the UK during the COVID-19 pandemic. *JAMA Network Open*. 2020;3(10):e2026064. <https://doi.org/10.1001/jamanetworkopen.2020.26064>
6. Barth J, Munder T, Gerger H, et al. Comparative efficacy of seven psychotherapeutic interventions for patients with depression: A network meta-analysis. *PLoS Med*. 2013;10(5):e1001454. <https://doi.org/10.1371/journal.pmed.1001454>
7. Galea S, Merchant RM, Lurie N. The mental health consequences of COVID-19 and physical distancing: The need for prevention and early intervention. *JAMA Internal Medicine*. 2020;(Journal Article). <https://doi.org/10.1001/jamainternmed.2020.1562>
8. Labarda CE, Jopson QDQ, Hui VKY, et al. Long-term displacement associated with health and stress among survivors of Typhoon Haiyan. *Psychological Trauma: Theory, Research, Practice and Policy*. 2020;(Journal Article). <https://doi.org/10.1037/tra0000573>
9. Maeda M, Oe M. Mental health consequences and social issues after the Fukushima disaster. *Asia Pacific Journal of Public Health*. 2017;29(2):36S-46S. <https://doi.org/10.1177/1010539516689695>
10. Brooks SK, Webster RK, Smith LE, et al. The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. *The Lancet*. 2020;395(10227):912-920. [https://doi.org/10.1016/S0140-6736\(20\)30460-8](https://doi.org/10.1016/S0140-6736(20)30460-8)
11. Hoesly D, Brown AD. Traumatic stress in the age of COVID-19: A call to close critical gaps and adapt to new realities. *Psychological Trauma : Theory, Research, Practice and Policy*. 2020;12(4):331-335. <https://doi.org/10.1037/tra0000592>
12. Layne SP, Hyman JM, Morens DM, et al. New coronavirus outbreak: Framing questions for pandemic prevention. *Science Translational Medicine*. 2020;12(534):<https://doi.org/10.1126/scitranslmed.abb1469>
13. Murphy L, Markey K, O' Donnell C, et al. The impact of the COVID-19 pandemic and its related restrictions on people with pre-existent mental health conditions: A scoping review. *Archives of Psychiatric Nursing* 2021;35(4):375-394. <https://doi.org/10.1016/j.apnu.2021.05.002>
14. Stroud I, Gutman LM. Longitudinal changes in the mental health of UK young male and female adults during the COVID-19 pandemic. *Psychiatry Research*. 2021;303. <https://doi.org/10.1016/j.psychres.2021.114074>
15. Amerio A, Lugo A, Stival C, et al. COVID-19 lockdown impact on mental health in a large representative sample of Italian adults. *Journal of Affective Disorders*. 2021;292:398-404. <https://doi.org/10.1016/j.jad.2021.05.117>
16. Bolt MA, Helming LM, Tintle NL. The associations between self-reported exposure to the Chernobyl nuclear disaster zone and mental health disorders in Ukraine. *Frontiers in Psychiatry*. 2018;9(Journal Article). <https://doi.org/10.3389/fpsy.2018.00032>
17. Fussell E, Lowe SR. The impact of housing displacement on the mental health of low-income parents after Hurricane Katrina. *Social Science & Medicine*. 2014;113(Journal Article):137-144. <https://doi.org/10.1016/j.socscimed.2014.05.025>
18. Seto M, Nemoto H, Kobayashi N, et al. Post-disaster mental health and psychosocial support in the areas affected by the Great East Japan Earthquake: A qualitative study. *BMC Psychiatry*. 2019;19(Journal Article). <https://ezproxy.lib.uconn.edu/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=psych&AN=2019-51419-001&site=ehost-live>
19. Sprague CM, Kia-Keating M, Felix E, et al. Youth psychosocial adjustment following wildfire: The role of family resilience, emotional support, and concrete support. *Child & Youth Care Forum*. 2015;44(3):433-450. <https://doi.org/10.1007/s10566-014-9285-7>
20. Cluver L, Lachman JM, Sherr L, et al. Parenting in a time of COVID-19. *The Lancet*. 2020;395(10231):e64. [https://doi.org/10.1016/S0140-6736\(20\)30736-4](https://doi.org/10.1016/S0140-6736(20)30736-4)
21. Russell BS, Hutchison M, Tambling R, et al. Initial challenges of caregiving during COVID-19: Caregiver burden, mental health, and the parent-child relationship. *Child Psychiatry and Human Development*. 2020;51(5):671-682. <https://doi.org/10.1007/s10578-020-01037-x>

22. Fisher J, Tran T, Hammarberg K, et al. Quantifying the mental health burden of the most severe COVID-19 restrictions: A natural experiment. *Journal of Affective Disorders* 2021;293:406-414. <https://doi.org/10.1016/j.jad.2021.06.060>
23. Paudel J. Home alone: Implications of COVID-19 for mental health. *Social Science & Medicine* 2021;285. <https://doi.org/10.1016/j.socscimed.2021.114259>
24. Pfefferbaum B, Nitiéma P, Tucker P, et al. Early child disaster mental health interventions: A review of the empirical evidence. *Child & Youth Care Forum*. 2017;46(5):621-642. <https://doi.org/10.1007/s10566-017-9397-y>
25. Weible CM, Nohrstedt D, Cairney P, et al. COVID-19 and the policy sciences: Initial reactions and perspectives. *Policy Sciences*. Published online April 18, 2020:1–17. <https://doi.org/10.1007/s11077-020-09381-4>
26. Tambling RR, Hynes KC, D'Aniello C. Are barriers to psychotherapy treatment seeking indicators of social determinants of health?: A critical review of the literature. *The American Journal of Family Therapy*. Published online November 27, 2020:1–16.
27. Grant JB, Bruce CP, Batterham PJ. Predictors of personal, perceived and self-stigma towards anxiety and depression. *Epidemiology and Psychiatric Sciences*. 2016;25(3):247-254. <https://doi.org/10.1017/S2045796015000220>
28. Brenner RE, Cornish MA, Heath PJ, et al. Seeking help despite the stigma: Experiential avoidance as a moderated mediator. *Journal of Counseling Psychology*. 2020;67(1):132-140. <https://doi.org/10.1037/cou0000365>
29. Bauer AM, Chen CN, Alegria M. English language proficiency and mental health service use among Latino and Asian Americans with mental disorders. *Medical Care*. 2010;48(12):1097-1104. <https://doi.org/10.1097/MLR.0b013e3181f80749>
30. Chow JCC, Jaffee K, Snowden L. Racial/ethnic disparities in the use of mental health services in poverty areas. *American Journal of Public Health*. 2003;93(5):792-797. <https://doi.org/10.2105/AJPH.93.5.792>
31. Langley AK, Nadeem E, Kataoka SH, et al. Evidence-based mental health programs in schools: Barriers and facilitators of successful implementation. *School Mental Health*. 2010;2(3):105-113. <https://doi.org/10.1007/s12310-010-9038-1>
32. Gulliver SB, Pennington ML, Torres VA, et al. Behavioral health programs in fire service: Surveying access and preferences. *Psychological Services*. 2019;16(2):340-345. <https://doi.org/10.1037/ser0000222>; <https://doi.org/10.1037/ser0000222.suppl> (Supplemental)
33. Roness A, Mykletun A, Dahl AA. Help-seeking behavior in patients with anxiety disorder and depression. *Acta Psychiatrica Scandinavica*. 2005;111(1):51-58. <https://doi.org/10.1111/j.1600-0447.2004.00433.x>
34. Susukida R, Mojtabai R, Mendelson T. Sex differences in help seeking for mood and anxiety disorders in the national comorbidity survey-replication. *Depression and Anxiety*. 2015;32(11):853-860. <https://doi.org/10.1002/da.22366>
35. Mechanic D. Barriers to help-seeking, detection, and adequate treatment for anxiety and mood disorders: Implications for health care policy. *Journal of Clinical Psychiatry*. 2007;68:20-26.
36. Patten SB, Williams JVA, Lavorato DH, et al. Perceived stigma among recipients of mental health care in the general Canadian population. *Canadian Journal of Psychiatry. Revue Canadienne de Psychiatrie*. 2016;61(8):480-488. <https://doi.org/10.1177/0706743716639928>
37. Wang J, Lam RW, Ho K, et al. Preferred features of E-mental health programs for prevention of major depression in male workers: Results from a Canadian national survey. *Journal of Medical Internet Research*. 2016;18(6):1-9. <https://doi.org/10.2196/jmir.568>
38. Breslau N, Anthony JC. Gender differences in the sensitivity to posttraumatic stress disorder: An epidemiological study of urban young adults. *Journal of Abnormal Psychology*. 2007;116(3):607-611. <https://doi.org/10.1037/0021-843X.116.3.607>
39. Breslau N, Davis GC, Schultz LR. Posttraumatic stress disorder and the incidence of nicotine, alcohol, and other drug disorders in persons who have experienced trauma. *Archives of General Psychiatry*. 2003;60(3):289-294. <https://doi.org/10.1001/archpsyc.60.3.289>
40. Roberts AL, Gilman SE, Breslau J, et al. Race/ethnic differences in exposure to traumatic events, development of post-traumatic stress disorder, and treatment-seeking for post-traumatic stress disorder in the United States. *Psychological Medicine*. 2011;41(1):71-83. <https://doi.org/10.1017/S0033291710000401>
41. Gavrilovic JJ, Schützwohl M, Fazel M, et al. Who seeks treatment after a traumatic event and who does not? A review of findings on mental health service utilization. *Journal of Traumatic Stress*. 2005;18(6):595-605. <https://doi.org/10.1002/jts.20068>
42. Sayer NA, Friedemann-Sanchez G, Spoon M, et al. A qualitative study of determinants of PTSD treatment initiation in veterans. *Psychiatry*. 2009;72(3):238-255. <https://doi.org/10.1521/psyc.2009.72.3.238>
43. Vogt D, Vaughn R, Glickman ME, et al. Gender differences in combat-related stressors and their association with postdeployment mental health in a nationally representative sample of US OEF/OIF veterans. *Journal of Abnormal Psychology*. 2011;120(4):797-806. <https://doi.org/10.1037/a0023452>;
44. Feldman-Summers S, Gordon PE, Meagher JR. The impact of rape on sexual satisfaction. *Journal of Abnormal Psychology*. 1979;88(1):101.
45. Aldwin C. Stress and coping across the lifespan. In: *The Oxford Handbook of Stress, Health, and Coping*. Oxford library of psychology. Oxford University Press; 2011:15–34.
46. Garland AF, Hawley KM, Brookman-Frazee L, et al. Identifying common elements of evidence-based psychosocial treatments for children's disruptive behavior problems. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2008;47(5):505-514. <https://doi.org/10.1097/CHI.0b013e31816765c2>
47. Masicampo EJ, Baumeister RF. Relating mindfulness and self-regulatory processes. *Psychological Inquiry*. 2007;18(4):255-258. <https://doi.org/10.1080/10478400701598363>
48. Wilson JM, Weiss A, Shook NJ. Mindfulness, self-compassion, and savoring: Factors that explain the relation between perceived social support and well-being. *Personality and Individual Differences*. 2020;152:109568. <https://doi.org/10.1016/j.paid.2019.109568>
49. Lindsay EK, Young S, Brown KW, et al. Mindfulness training reduces loneliness and increases social contact in a randomized controlled trial. *Proceedings of the National Academy of Sciences*. 2019;116(9):3488-3493. <https://doi.org/10.1073/pnas.1813588116>
50. Quaglia JT, Brown KW, Lindsay EK, et al. From conceptualization to operationalization of mindfulness. In: *Handbook of Mindfulness: Theory, Research, and Practice*. The Guilford Press; 2015:151–170.
51. Garland EL, Geschwind N, Peeters F, et al. Mindfulness training promotes upward spirals of positive affect and cognition: Multilevel and autoregressive latent trajectory modeling analyses. *Frontiers in Psychology*. 2015;6:15. <https://doi.org/10.3389/fpsyg.2015.00015>
52. Dong E, Du H, Gardner L. An interactive web-based dashboard to track COVID-19 in real time. *The Lancet. Infectious Diseases*. 2020;20(5):533-534. [https://doi.org/10.1016/S1473-3099\(20\)30120-1](https://doi.org/10.1016/S1473-3099(20)30120-1)

53. Mortensen K, Hughes TL. Comparing Amazon's mechanical turk platform to conventional data collection methods in the health and medical research Literature. *Journal of General Internal Medicine*. 2018;33(4):533-538. <https://doi.org/10.1007/s11606-017-4246-0>
54. Chandler J, Shapiro D. Conducting clinical research using crowdsourced convenience samples. *Annual Review of Clinical Psychology*. 2016;12:53-81. <https://doi.org/10.1146/annurev-clinpsy-021815-093623>
55. Sheehan KB. Crowdsourcing research: Data collection with Amazon's mechanical turk. *Communication Monographs*. 2018;85(1):140-156. <https://doi.org/10.1080/03637751.2017.1342043>
56. Antony MM, Bieling PJ, Cox BJ, et al. Psychometric properties of the 42-item and 21-item versions of the depression anxiety stress scales in clinical groups and a community sample. *Psychological Assessment*. 1998;10(2):176-181. <https://doi.org/10.1037/1040-3590.10.2.176>
57. Wang G, Zhang Y, Zhao J, et al. Mitigate the effects of home confinement on children during the COVID-19 outbreak. *The Lancet*. 2020;395(10228):945-947. [https://doi.org/10.1016/S0140-6736\(20\)30547-X](https://doi.org/10.1016/S0140-6736(20)30547-X)
58. Arditte KA, Çek D, Shaw AM, et al. The importance of assessing clinical phenomena in mechanical turk research. *Psychological Assessment*. 2016;28(6):684-691. <https://doi.org/10.1037/pas0000217>
59. Lovibond PF, Lovibond SH. 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*. 1995;33(3):335-343. [https://doi.org/10.1016/0005-7967\(94\)00075-u](https://doi.org/10.1016/0005-7967(94)00075-u)
60. Kaufman EA, Xia M, Fosco G, et al. The difficulties in emotion regulation scale short form (DERS-SF): Validation and replication in adolescent and adult samples. *Journal of Psychopathology and Behavioral Assessment*. 2016;38(3):443-455. <https://doi.org/10.1007/s10862-015-9529-3>
61. Brookings JB, Bolton B. Confirmatory factor analysis of the interpersonal support evaluation list. *American Journal of Community Psychology*. 1988;16(1):137-147. <https://doi.org/10.1007/BF00906076>
62. Payne T, Andrew M, Butler K, et al. Psychometric evaluation of the interpersonal support evaluation list—short form in the ARIC study cohort. *SAGE Open*. 2012;2. <https://doi.org/10.1177/2158244012461923>
63. Feldman G, Hayes A, Kumar S, et al. mindfulness and emotion regulation: The development and initial validation of the cognitive and affective mindfulness scale-revised (CAMS-R). *Journal of Psychopathology and Behavioral Assessment*. 2007;29:177-190. <https://doi.org/10.1007/s10862-006-9035-8>
64. Cortés-Álvarez NY, Piñeiro-Lamas R, Vuelvas-Olmos CR. Psychological effects and associated factors of COVID-19 in a Mexican sample. *Disaster Medicine and Public Health Preparedness*. 2020;14(3):413-424. <https://doi.org/10.1017/dmp.2020.215>
65. Mazza C, Ricci E, Biondi S, et al. A nationwide survey of psychological distress among Italian people during the COVID-19 pandemic: Immediate Psychological Responses and Associated Factors. *International Journal of Environmental Research and Public Health*. 2020;17(9):E3165. <https://doi.org/10.3390/ijerph17093165>
66. Barbosa-Leiker C, Smith CL, Crespi EJ, et al. Stressors, coping, and resources needed during the COVID-19 pandemic in a sample of perinatal women. *BMC Pregnancy and Childbirth*. 2021;21(1):171. <https://doi.org/10.1186/s12884-021-03665-0>
67. Groarke JM, Berry E, Graham-Wisener L, et al. Loneliness in the UK during the COVID-19 pandemic: Cross-sectional results from the COVID-19 psychological wellbeing study. *PLoS One*. 2020;15(9):e0239698. <https://doi.org/10.1371/journal.pone.0239698>
68. Vahratian A. Symptoms of anxiety or depressive disorder and use of mental health care among adults during the COVID-19 pandemic — United States, August 2020–February 2021. *MMWR. Morbidity and Mortality Weekly Report*. 2021;70. <https://doi.org/10.15585/mmwr.mm7013e2>
69. Tambling R, Russell B, Tomkunas A, et al. Factors contributing to parents' psychological and medical help seeking during the COVID-19 global pandemic. *Family & Community Health*. 2021;44(2):87-98. <https://doi.org/10.1097/FCH.0000000000000298>
70. Bareket-Bojmel L, Shahar G, Abu-Kaf S, et al. Perceived social support, loneliness, and hope during the COVID-19 pandemic: Testing a mediating model in the UK, USA, and Israel. *The British Journal of Clinical Psychology*. Published online February 23, 2021:<https://doi.org/10.1111/bjc.12285>
71. Grey I, Arora T, Thomas J, et al. The role of perceived social support on depression and sleep during the COVID-19 pandemic. *Psychiatry Research*. 2020;293:113452. <https://doi.org/10.1016/j.psychres.2020.113452>
72. Ophir Y, Sisso I, Asterhan CSC, et al. The turker blues: Hidden factors behind increased depression rates among Amazon's mechanical turkers. *Clinical Psychological Science*. 2020;8(1):65-83. <https://doi.org/10.1177/2167702619865973>

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.