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# Parenting Amidst COVID-19: Pandemic-Related Stressors, Inequities, and Treatment Utilization and Perceptions

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Many parents of children under age 18 are faced with additional COVID-19 parenting-related stressors and may be experiencing increases in psychological difficulties; however, we have yet to investigate parent's levels of posttraumatic stress symptoms (PTSS) and adjustment disorder. Further, COVID-19 has served as a sobering reminder of the significant public health disparities in our society and it is critical to identify risk factors for poorer clinical outcomes. The primary objectives of the present study were to: (a) determine whether parents are reporting higher levels of pandemic-related stress, PTSS, and adjustment disorder than controls, (b) identify specific individual-level factors (e.g., age, gender, race, number of children, age of children) that may be related to higher levels of stress and symptoms among parents, and (c) report parents' utilization of, and perceived efficacy of, psychological interventions during COVID-19. A U.S. nationally representative sample ( $N = 2,019$ ) from Qualtrics Data panels was recruited in July–August 2020. Parents endorsed higher levels of stress, PTSS, and adjustment disorder, particularly younger parents. Further, 38.3% of parents reported PTSS above clinical cutoff. Younger participants and persons of color reported higher levels of pandemic-related stress. One-third of parents (33.1%) reported using online mental health services. Taken together, parents may be at greater risk for pandemic stress, PTSS, and adjustment disorder symptoms. Individual-level risk factors, such as age and minority status, are important to consider when understanding COVID-19 stress. Clinical intervention efforts should prioritize trauma-focused treatments for parents, especially those who are younger and identify as a person of color.


**Keywords:** COVID-19, PTSS, parents, adjustment disorder

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The COVID-19 pandemic has had an unprecedented and devastating effect on the lives of children and parents across the world. Although the public health efforts to curb the transmission of COVID-19 are paramount in preventing the

spread of the disease, these strategies have resulted in profound, and potentially overwhelming, changes and stressors for all. Parents of children under 18 have had to contend with additional and unique parenting-related stressors

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including the loss of childcare, closures of schools and other child-focused activities, transitions to virtual or e-learning, economic strain and unemployment as a result of loss of childcare, and isolation from family members, friends, and childcare providers who help with childcare and ease the burdens of parenthood. Many parents, particularly mothers, have been subsequently forced to leave the workforce (Scott, 2020), or attempt to manage work responsibilities without childcare. To help support parents, work is needed to increase our understanding of the stressors faced by parents, as well as identify risk factors for pandemic-related stress and mental health concerns. Critically, the hardships of COVID-19 are disturbingly unequally distributed. Women, persons of color, and those with lower reported household incomes have been hit the hardest (Centers for Disease Control & Prevention [CDC], 2020). Efforts to research the impact of COVID-19 must therefore take into account how demographic factors may result in inequities in pandemic-related stress and psychological symptoms.

COVID-19 is not only a global public health crisis but also represents a mental health emergency. Early work is already reporting significant increases in depression and anxiety symptoms following the pandemic (Salari et al., 2020); however, information regarding posttraumatic stress symptoms (PTSS) and adjustment disorder is currently limited. PTSS are important to examine given their associations with numerous other adverse outcomes, including health difficulties (American Psychiatric Association [APA], 2013). Similarly, adjustment disorder diagnoses are related to meeting criteria for a severe psychiatric condition within a year (APA, 2013). To our knowledge, no prior study has reported on PTSS or adjustment disorder symptoms specifically among parents. As parents may have additional competing demands, they may be more vulnerable to adverse COVID-19-related effects, including PTSS and adjustment disorder symptoms.

Further, mental healthcare will, hopefully, play a critical role in mitigating the negative psychological effects of COVID-19 among parents. We also need to understand parents' use and perceived benefit of psychological interventions, as this may inform outreach efforts. The aims of the present study were to: (a) determine if parents experiencing higher levels of pandemic-related stress and mental health concerns (i.e., PTSS and

adjustment disorder) than those without children under 18, (b) identify if specific individual-level factors (e.g., gender, race, income, education, number and age of children) are related to higher levels of pandemic-related stress, PTSS, and adjustment disorder symptoms, and (c) report parents' rates of mental health utilization and perceptions regarding the usefulness of treatment options during COVID-19.

## COVID-19 and Parenting

For many children and parents, the changes brought about by COVID-19 have been sizable, including significant and chronic disruptions to daily living due to the closing of schools, childcare centers, child activities and playgrounds, and nonessential businesses. Although the majority of U.S. children (90.8%) have one parent who works outside the home and 63% have two working parents (Bureau of Labor Statistics, 2019), 24% of parents reported a loss of regular childcare (Patrick et al., 2020). Many working parents are therefore attempting to care for their children and work from home simultaneously, are forced to go on leave (which may or may not be paid), or have to leave their jobs (Pew Research Center, 2020; Scott, 2020). Among working parents, 35% indicated that they are significantly struggling to manage their childcare responsibilities (Pew Research Center, 2020). Parents with multiple children of differing ages have added pressures, particularly those of young children who have not entered school and need greater levels of monitoring. The loss of childcare is also higher among parents of younger children—38.6% of parents with children ages 0–5 lost childcare compared to 7.5% of parents with children 13–17 (Patrick et al., 2020). Parents of multiple children and/or younger children may then be at greater risk for childcare loss, and possibly greater levels of stress and clinical difficulties.

These disruptions are likely to significantly exacerbate parents' levels of stress. One longitudinal study of hourly service worker parents reported that 45% indicated increased caregiving burden (Gassman-Pines et al., 2020). The negative role of stress on parents is well documented, including on the parent–child relationship, harsher parenting practices, and child abuse potential. Yet, parents may have been cut off from their social support networks in the midst of COVID-19, despite the importance of

these networks for parent's own well-being as well as to help lessen parental responsibilities and stress (Parkes et al., 2015). This includes grandparents who may have previously provided childcare but may be unable to do so given their higher risk for COVID-19 due to their advanced age and possibly other health conditions. Among parents in Singapore, perceptions regarding the impact of COVID-19 were related to increased parental stress, which in turn, was tied to increased harsh parenting practices (Chung et al., 2020). It is, therefore, important to improve our understanding of COVID-19 stress faced by parents as identification of pandemic stress may inform prevention and intervention efforts, including as a way to provide validation and psychoeducation to parents (e.g., knowing that they are "not alone" in their struggles) as well as more targeted resources.

### COVID-19 Inequities

The COVID-19 pandemic has also created a stronger spotlight on the existing inequities in our society. Mothers, minorities, and those with lower incomes have been hit the hardest by the pandemic (CDC, 2020). The COVID-19 disease burden is being unequally shouldered by racial and ethnic minority groups. Black or African American and Latinx individuals are at much greater risk to be diagnosed with COVID-19, be hospitalized from COVID-19, and to die from COVID-19 (CDC, 2020). Racial systemic inequities, such as educational inequities, experiences of racism and discrimination, lack of access to safe housing, and poor access to affordable health insurance and quality healthcare contribute to these health disparities (Annie E. Casey Foundation, 2006; Brondolo et al., 2009; CDC, 2020). Income inequality also increases the risk for greater burdens from COVID-19. In general national samples, 28% of adults reported that at least one member of their household has lost their job or been laid off (Pew Research Center, 2020), yet among hourly service worker parents, nearly half reported job loss and nearly two-thirds reported income loss (Gassman-Pines et al., 2020). Given these inequities, it is paramount to specifically determine how demographic factors may relate to increased pandemic-related stress and mental health concerns.

### COVID-19 and Mental Health

The pandemic is expected to result in significant mental health challenges across the world. Experts predict increases in child maltreatment, intimate partner violence, suicide, drug overdoses, and psychological difficulties, consistent with other community disasters and emergencies (Cohen-Silver et al., 2020; Furr et al., 2010; Scheeringa & Zeanah, 2008). Outside of the U.S., increases in anxiety and depressive symptoms and sleep disturbances have been reported (e.g., Huang & Zhao, 2020; Marazziti et al., 2020; Pierce et al., 2020). Less is known regarding the impact of the pandemic on parents' mental health. However, in one national survey of parents with children under 18, 27% indicated that their own mental health had worsened, and 14% reported that their children's behavioral health had declined (Patrick et al., 2020). Similarly, one longitudinal study that began prior to the pandemic observed that COVID-19-related hardships were tied to increases in parents' and children's psychological difficulties and decreases in parental and child psychological well-being (Gassman-Pines et al., 2020).

Even though COVID-19 may not be conceptualized as a Criterion A event per the *DSM-5*, it may be for some, including those who contracted the disease or had a loved one die from COVID-19. Trauma-focused researchers are calling for the use of trauma-informed preventions to combat the impact of COVID-19 (Galea et al., 2020). Similar to depressive and anxiety symptoms, the pandemic will also undoubtedly result in increases in PTSD and adjustment disorder symptoms. Preliminary work has indicated increased rates of PTSD symptoms among young adults (Liu et al., 2020) and research with parent samples is needed given their additional levels of stress, which may make them more vulnerable. Further, women, persons of color, and those with lower incomes are at greater risk for PTSD (APA, 2013), and may be more likely to experience mental health challenges during the pandemic (Liu et al., 2020). Although to our knowledge, work has also not been conducted to examine the impact of COVID-19 on adjustment disorder symptoms, these difficulties are related to a widespread increased risk for psychological conditions (APA, 2013). Further, the presence of adjustment disorder symptoms may be a prime time for early prevention and intervention efforts, thus, identification of these symptoms is paramount.

As COVID-19 pandemic began to unfold, mental health professionals worked to help combat the stress and mental health burden, and a rise in psychological service utilization is expected based on prior work from disaster and other large-scale traumatic events (Cohen-Silver et al., 2020; Furr et al., 2010). As noted, considerable decrements in psychological functioning are also anticipated (Salari et al., 2020; Van Bavel et al., 2020). Access to, and use of, mental health services will likely play a very substantial role in mitigating the impact of COVID-19 on psychological functioning. We also know that not everyone who may benefit from psychological interventions is able to access and utilize these services, particularly some racial and ethnic minorities (Marrast et al., 2016). These inequities underscore the significance of examining how demographic factors relate to use of and perceived benefit from psychological treatments.

### The Present Study

As our knowledge of the negative impact of COVID-19 grows, work is needed to understand how parents are specifically affected by the pandemic as well as what individual-level risk factors are associated with COVID-19 stress and psychological difficulties. PTSS and adjustment disorder symptoms may increase as a result of the COVID-19 pandemic. Nonetheless, to our knowledge, no study has examined levels of pandemic stress, PTSS, and adjustment disorder symptoms among parents during the COVID-19 pandemic. We are also unaware of research that has investigated factors that may be associated with these psychological difficulties among U.S. parents. The present study aimed to contribute to the emerging literature regarding the impact of COVID-19 on parents by examining rates of pandemic-related stressors and PTSS and adjustment disorder among parents, as well as identifying potential individual factors that are associated with higher levels of stress, PTSS, and adjustment disorder symptoms. First, parents were hypothesized to endorse higher levels of pandemic-related stress, PTSS, and adjustment disorder symptoms compared to those without children under 18. Second, consistent with the prior traumatic stress literature (APA, 2013), we expected that younger age, female gender, minority status, lower household income, and lower educational

attainment would correspond with higher levels of stress, PTSS, and adjustment disorder among parents. We also anticipated the number of children and having a young child would be linked with higher rates of stress and clinical symptoms. As a third aim, we reported parents' use of forms of mental health services as well as the perceived efficacy of these specific types of services during the pandemic. This information in "real-time" may allow mental health professionals to help attempt to remedy structural inequities, improve access to care through targeted interventions, and better serve our communities during these difficult times.

## Method

### Procedure

Participants from the present study were U.S. residents who were selected from a larger longitudinal, international study that is focused on understanding the impact of COVID-19. The study is currently ongoing, and the present study relied upon baseline data. Participants were recruited through Qualtrics online panel service, from July 2nd, 2020 to August 3rd, 2020. Qualtrics identified a representative U.S. sample stratified by age, gender, race/ethnicity, and schooling. All participants met the panel's data quality standards (e.g., speeding screener, instructed responses). We aimed to recruit 2,000 participants. Qualtrics oversampled to ensure minority groups were adequately represented, which resulted in a final sample of 2,019 participants. Participants were recruited from all 50 U.S. states as well as the District of Columbia and Puerto Rico. All study procedures were approved by the University of Minnesota and Purdue University. The parent study was preregistered <https://osf.io.8xhyg>.

### Participants

In the larger sample that included those with and without children ( $N = 2,019$ ), participants were approximately 47 years old ( $M = 47.43$ ,  $SD = 17.63$ , Range = 18–99) and the sample was half female (50.77%, 48.59% male, 0.35% as other, and 0.30% declined answering). Participants self-identified in one or more of the following racial/ethnic groups: White/European



(60.77%); Hispanic/Latinx (16.30%); Black/African (14.66%); East Asian (3.57%); Native American, Alaska Native, Native Hawaiian/Polynesian (2.92%); Southeast Asian (1.73%); Middle Eastern, South Asian (1.58%); other/Multiracial (1.09%); declined answering (2.08%). Due to small cell sizes, participants were classified as person of color 37.9% versus White 60.8%. Average annual household income was 2.82 ( $SD = 1.37$ ), which corresponds to a mean of \$26,000–\$59,000. In terms of educational attainment, 36.65% completed an Associate's degree, technical school, or some college; 29.62% had at least a bachelor's degree; 28.97% completed high school or an equivalent; 3.57% of the sample completed less than high school; and 1.19% declined to answer.

Among the subsample of parents with a child ages 18 and under ( $n = 514$ ), participants had an average age of 38 ( $M = 38.64$   $SD = 10.45$ , Range = 19–78) and 59.7% were female (39.9% male, .4% declined to answer). Fifty-four percent (54.6%) of the sample identified as White/European; Hispanic/Latinx (19.1%); Black/African (14.6%); Multiracial (4.5%); East Asian (2.4%); Middle Eastern, South Asian (2.2%); Southeast Asian (2%); Native American, Alaska Native, Native Hawaiian/Polynesian (.2%); other (.04%). Participants were again coded as being a person of color (44%) or white (56%). Mean household income was 2.85 ( $SD = 1.45$ ), which corresponds with a mean income of \$26,000–\$59,000. Thirty-one percent (31.3%) of the participants had completed high school or an equivalent, 26.1% completed an Associate's degree, technical school, or some college; 21.6% had obtained a Bachelor's degree, 15.9% completed a Master's degree or Doctorate, 3.9% completed less than high school and 1.2% declined to answer. Participants had an average number of 1.34 children under the ages of 18 ( $SD = .51$ ; Range 1–3). Participants reported the ages of their children in categorical groupings: 5.3% of the sample had a child between the ages of 0 and 3, 15% had a child ages 4 and 7, and 13.5% reported having a child between the ages of 8 and 18.

## Measures

### Demographics

Participants reported their background information using a demographics measure, which

assessed factors such as age, gender, race and ethnicity, educational attainment, income, parenthood status, number of children, and ages of children.

### COVID-19 Stressors

Participants completed a 58-item COVID-related stressors measure that was developed for this study (Lotzin et al., 2020). These items were developed and refined by the consensus of an expert group of professionals across 11 countries who are part of an international society for traumatic stress. Stressors were categorized into six domains: pandemic specific (e.g., “news/media coverage of the coronavirus pandemic [not social media]”), health-related (e.g., “infection of loved ones with the coronavirus”), restricted social contact (e.g., “restricted face-to-face contact with loved ones”), restricted public life (e.g., “restricted private/personal traveling”), staying at home (e.g., “conflicts at home”), mood-related (e.g., “boredom”), and work-related (e.g., “increased workload”). Participants rated each of the stressors on a 4-point scale from 1 (*not at all stressed*) to 4 (*strongly stressed*). Scores were averaged individually and within each domain. The six subscale scores were used in the study.

### Posttraumatic Stress Symptoms

PTSS were measured using the five-item Primary Care-Posttraumatic Stress Disorder-5 (PC-PTSD-5; Prins et al., 2016). We excluded the initial question related to whether the traumatic event involved actual/threatened death, serious injury, or sexual violence. Participants were instead asked to think about the “worst or most stressful event” that they had experienced due to COVID-19 in the past month and then indicate their level of PTSS via 5 *yes/no* PTSS screening questions (e.g., “have you felt guilty or unable to stop blaming yourself or others for the event or any problems the event may have caused?”). Items were summed, ranging from 0 to 5. Clinical cutoff for the PC-PTSD-5 is a score of 3 or more (Prins et al., 2016). The PC-PTSD-5 has evidence of satisfactory sensitivity and specificity. In the present study, internal consistency was satisfactory,  $\alpha = .79$ .

### ***Adjustment Disorder Symptoms***

Participants reported their current level of adjustment disorder symptoms using the eight-item Brief Adjustment Disorder-New Module (Ben-Ezra et al., 2018). Participants were asked to think about the worst/most stressful COVID event within the last month, and then rate items (“My thoughts often revolve around anything related to the stressful situation,” “Since the stressful situation, I find it difficult to concentrate on things”) on a 4-point scale from 1 (*never*) to 4 (*often*; Range 8–32). Scores 18.5 or higher indicate significant adjustment disorder symptoms (Ben-Ezra et al., 2018). The measure has previously established psychometrics. Here, internal consistency was  $\alpha = .95$ .

### ***Treatment Use and Perceptions***

A measure regarding participant’s use of mental health services and perceptions of treatment benefit was developed for this study. Participants were asked which of the following services they currently use, if any, when distressed: online app or course, online or telephone coaching or consultation or online self-help groups, online therapy, in-person self-help groups or coaching services, and in-person therapy. Participants were then asked if they thought any of the following services would be helpful for them when distressed: online apps or courses, online coaching or consultation or online self-help groups, online therapy, in-person self-help groups or coaching services, and in-person therapy.

### ***Data Analysis***

Prior to analyses, the data were inspected for bots, suspicious/incoherent qualitative responses by Qualtrics quality control. We also double-checked the data prior to the official receipt of the data. Missingness was very low in the present study (<2%) on the variables of interest and no missing data were imputed. Multicollinearity among the pandemic stressors was also assessed using correlations and variance inflation factors (VIF), which indicated that multicollinearity was not an issue. We assessed demographic factors (i.e., age, gender, race/ethnicity, income, education) in relation to pandemic-related stressors, PTSS, and adjustment disorder symptoms using

correlations and *t*-tests to determine how these variables may correspond with stress and mental health challenges. The first aim, that parents would report higher levels of pandemic-related stressors, PTSS, and adjustment disorder symptoms than individuals without a child under age 18, was assessed using a series of ANCOVAs. Parents were also expected to be more likely to report PTSS and adjustment disorder symptoms above clinical cutoff, and these hypotheses were tested using chi-square analyses. To test the second set of hypotheses that younger age, female gender, minority status, lower household income, lower educational attainment, a greater number of children, and having a young child would correspond with higher levels of stress, PTSS, and adjustment disorder among parents we used a series of linear regressions. For the third aim, frequencies were then used to report rates of mental health utilization and perceived benefit among parents.

## **Results**

### ***Preliminary Analyses***

Age was inversely correlated with each type of pandemic stress (Range  $r = -.29$ – $-.39$ ,  $p < .001$ ), as well as PTSS symptoms,  $r = -.35$ ,  $p = .001$ , and adjustment disorder symptoms,  $r = -.33$ ,  $p = .001$ . Women reported higher levels of each form of pandemic stress but staying at home ( $p < .05$ ). As expected, women also endorsed higher levels of PTSS and adjustment disorder symptoms. Similarly, persons of color indicated higher levels of pandemic stress, PTSS, and symptoms of adjustment disorder. Educational attainment exhibited small positive correlations with most of pandemic stressors (Range  $r = .02$ – $.10$ ) but was not tied to PTSS or adjustment disorder symptoms. Household income was correlated only with restriction on public life,  $r = .05$ ,  $p = .02$ , and adjustment disorder symptoms,  $r = -.06$ ,  $p = .01$ . For consistency, age, gender, minority status, income, and education attainment were included in the analyses as covariates.

### ***Aim 1: Levels of Stress and Symptoms Among Parents Versus Controls***

In the model contrasting parents of a child under age 18 to controls, age remained related to all of the pandemic stressors, PTSS, and adjustment

disorder symptoms (statistics available upon request). Minority status was tied to higher levels of several of the pandemic stressors—pandemic-specific stress, health-related stress, restricted social contact, pandemic staying at home stress, and work-related stress. Gender and income were unexpectedly unrelated to each of the dependent variables in the larger model. Educational attainment was associated only with stress regarding restrictions regarding public life. As depicted in Table 1, parents reported higher levels of all but one of the pandemic stressors (i.e., pandemic-specific stress, restricted social contact stress, restricted public life stress, stress regarding staying at home, and work-related stress), whereas mood-related stress was unrelated. Parents also endorsed significantly higher levels of PTSS and adjustment disorder symptoms. In the full sample, 28.1% of participants indicated PTSS above clinical cutoff; and 13.2% reported adjustment disorder symptoms above cutoff. Among parents, 38.3% of parents endorsed PTSS above clinical cutoff and 18.6% acknowledged significant levels of adjustment disorder symptoms. Parents were much more likely to report both PTSS and adjustment disorder symptoms above clinical cutoff,  $\chi^2(1, n = 1,942) = 34.23, p < .001$ ;  $\chi^2(1, n = 1,993) = 17.08, p < .001$ , respectively.

**Aim 2: Risk Factors of Stress and Symptoms Among Parents**

Among parents with at least one child under the age of 18, age was inversely related to pandemic

stress regarding pandemic stressors, health-related stress, stress regarding staying at home, mood-related and work-related stress (see Supplemental Table 1). Trends were also noted for PTSS ( $p = .050$ ) and adjustment disorder symptoms ( $p = .054$ ). Minority status was related to greater health-related stress, restricted social contact, and work-related stress, but not to PTSS or adjustment disorder symptoms. Gender and income were not tied to pandemic stress, PTSS, or symptoms of adjustment disorder. Educational attainment was related to pandemic stress work-related stress.

A number of children was expected to be associated with increased levels of pandemic stress and symptoms and was tied to higher levels of PTSS and adjustment disorder symptoms. A number of children was only marginally related to increased stress regarding staying at home ( $p = .051$ ). Having a child between the ages of 0 and 7 was not associated with increased levels of pandemic-related stressors or adjustment disorder symptoms, but was marginally tied to increased levels of PTSS ( $p = .059$ ). Parents who had a child between the ages of 4 and 7 similarly did not indicate higher levels of pandemic-related stress or clinical symptoms.

**Aim 3: Use and Perceptions of Mental Health Services Among Parents**

In terms of rates of psychological services, 33.1% of parents reported using at least one form of online mental health service. Specifically,

**Table 1**  
*Results From MANCOVA Comparing Parents of a Child Under Age 18 to Controls*

Factors	Parents		Controls		ANCOVA			
	M	SD	M	SD	B	SE	t	95% CI
Pandemic-specific stress	1.74	.68	1.45	.76	.21	.06	3.22*	.08–.35
Health-related	1.56	.90	1.25	.91	.19	.08	2.48*	.04–.35
Restricted social contact	1.70	.89	1.22	.93	.33	.08	4.11***	.17–.48
Restricted public life	1.59	.84	1.09	.80	.41	.07	5.56***	.27–.56
Staying at home	1.16	.93	.57	.73	.44	.07	6.04***	.30–.59
Mood-related	1.55	.93	1.24	.93	.09	.08	1.20	–.06–.25
Work-related	1.52	.84	1.10	.89	.35	.07	4.76***	.20–.49
PTSS	2.05	1.74	1.39	1.63	.42	.16	2.65*	.11–.74
Adjustment disorder	1.42	.91	1.05	.93	.21	.08	2.58*	.05–.37

*Note.* PTSS = Posttraumatic stress symptoms; MANCOVA = Multivariate analysis of covariance; ANCOVA = Analysis of covariance. Model controls for age, gender, race, income, and educational attainment. Additional statistics for the covariates are available by request.  
\*  $p < .05$ . \*\*\*  $p < .001$ .



23.4% of parents indicated that they used an online app or course, 17.4% reported using online or telephone coaching or consultation or online self-help groups, and 8.8% reported engaging in online therapy. For in-person services, 12.3% indicated that they were using at least one type of in-person form of mental health treatment, with 7.2% reporting using in-person self-help groups or coaching services and 7% continuing in in-person therapy. When asked about the perceived helpfulness of online apps or courses, 35.8% expressed that they believed these tools would be useful for managing mental health and a similar 35.2% reported that online coaching or consultation or online self-help groups would be beneficial. A smaller percentage, 18.5%, indicated that online therapy would be useful. In-person services were also reported to be helpful by a smaller percentage of participants: 17.7% for groups or coaching services and 16% for in-person therapy.

### Discussion

The influence of COVID-19 on families is profound as many parents of children are faced with additional challenges, coupled without tangible parenting supports. COVID-19 stressors appear to be negatively impacting our mental health, including depressive and anxiety symptoms (Liu et al., 2020; Salari et al., 2020), yet, PTSS and adjustment disorder symptoms have been overlooked. Further, there are longstanding structural inequities in the U.S., and risk for COVID-19 and mental health challenges are not equally distributed. The aims of the study were to expand our knowledge of COVID-19 on parents by: (a) determining whether parents of children under 18 are experiencing higher levels of pandemic-related stress, PTSS, and adjustment disorder symptoms than controls; (b) investigating whether demographic factors are related to higher rates of COVID stress and clinical difficulties among parents; (c) describing parents' rates of mental health utilization and perceptions regarding the usefulness of treatment options.

As mostly anticipated, parents endorsed higher levels of all but one, mood-related stress, pandemic stressors. Even after accounting for individual-level factors, parents expressed higher levels of pandemic-specific stress, restricted social contact stress, restricted public life stress, stress regarding staying at home, and

work-related stress. Parents also acknowledged significantly higher levels of PTSS and adjustment disorder symptoms than individuals who did not have a child under age 18. Indeed, 38.3% of parents endorsed PTSS above clinical cutoff and 18.6% acknowledged significant levels of adjustment disorder symptoms, and parents were more exceed clinical cutoff for both conditions compared to controls. Parents who have children under age 18, especially those who are younger and identify as a person of color may also be a key group at greater risk for COVID-19 challenges, particularly PTSS. Given that 38.3% of parents endorsed PTSS above cutoff, these high rates strongly indicate the importance of researching and targeting PTSS in clinical intervention efforts.

Younger age emerged as a factor related to pandemic stress among parents and was marginally tied to PTSS and adjustment disorder symptoms. Age was related to both PTSS and adjustment disorder symptoms in the larger model, and the reduced associations may be a function of the smaller sample size of parents with a child under age 18, which was about 50% smaller. As older individuals are at greater risk for COVID-19, these findings were perhaps a bit unexpected. However, perhaps younger participants are more impacted by the pandemic as they may be more likely to be in the workforce and having manage more competing responsibilities (e.g., children). Younger age is also a risk factor for PTSS (APA, 2013). In contrast to expectations, female parents did not endorse higher levels of pandemic stress, PTSS, or adjustment disorder symptoms in the context of other factors. When other factors are accounted for, gender may be less impactful in understanding levels of stress and clinical difficulties. Also unexpectedly, income was consistently unrelated to the variables of interest and educational attainment was only tied to work-related stress.

As expected, parents who identified as a person of color acknowledged higher levels of pandemic stress. Minorities are at greater risk for contracting and dying from COVID-19 and minorities are also at increased risk for exhibiting PTSS (APA, 2013; CDC, 2020; Liu et al., 2020). Parents who are persons of color may be more vulnerable to pandemic stress due to the structural inequities that do not disappear even in the presence of greater educational attainment and income, as well as discrimination and racism (CDC, 2020). Yet,

parents of color did not endorse higher levels of PTSS or symptoms of adjustment disorder, which was surprising as minority status was related to these outcomes in the larger sample. Minority parents may not be at greater risk for PTSS or adjustment disorder symptoms than White parents, or this may be a function of sampling bias. These results are inconsistent with the traumatic stress literature, in which persons of color are more likely to exhibit PTSS even after income and education are considered (APA, 2013). Nonetheless, these findings speak to the importance of targeting younger adults and minorities in COVID-19 prevention efforts. Further, these results may reiterate that the experiences of minorities may be most impacted, as these differences remained even after taking into account income and education.

A number of children was expected to relate to increased levels of pandemic stress and symptoms, and while this factor was associated with PTSS and adjustment disorder symptoms, it was not tied to increased pandemic stress. It is not clear why a number of children would only be linked to increased clinical symptoms, but not pandemic stress. Perhaps the number of children is less relevant in understanding pandemic stress specifically as levels of pandemic stress may remain more constant despite a larger family size. Nonetheless, as number of children increases, parents may be more vulnerable to psychological distress; however, replication is needed. Family size was small in this sample ( $M = 1.34$ ;  $SD = .51$ ), and differences in pandemic stress may have emerged among parents with more children. When the specific age groups were examined, having a child between the ages of 0 and 3 or 4 and 7 was also surprisingly not linked to either pandemic-related stressors and clinical difficulties. Ties may have been revealed if we had examined the child's age continuously, alongside other key variables such as child's gender and level of psychological difficulties. Alternatively, the developmental stage of the child may not be a risk factor for increased stress and symptoms. Taken together, basic aspects of the parents' children were not related to pandemic stress, but a number of children corresponded with increases clinical challenges. Future work should address other potentially relevant family factors, such as having a stay-at-home caregiver, amount of childcare (and changes in childcare), and family and social support and further

understand risk factors for parents' pandemic stress and psychological difficulties.

The final aim of the study was to report rates of psychological service use and perceived efficacy. On the whole, roughly a quarter of the sample utilized some form of treatment, with online apps and courses being the most commonly used (23.4%). Only roughly one-third of the sample expressed that they believed online apps or courses would be helpful to manage mental health challenges and a similar number of parents indicated that online coaching, consultation, or self-help groups may be beneficial. Thus, it seems prudent to work to increase perceptions of efficacy for online therapeutic interventions among parents. In-person services were rated much less positively than other services. Future studies should determine what factors are related to parent's beliefs regarding the utility of psychological interventions during COVID-19 as well as what forms of apps and what specific topics would be most useful for parents.

### Limitations

The study results should be contextualized in terms of study limitations. Most importantly, the study began after the onset of the COVID-19 pandemic, and as a cross-sectional study, we cannot determine the temporality of the associations. We also do not know if any of the psychological symptoms emerged after the pandemic began, or if they were present beforehand. We are currently conducting the follow-up portion of the study and our future results may be helpful in understanding how parents' pandemic stress and symptoms may shift over time. The study relied on a sample of participants from Qualtrics, which may not be generalizable to the U.S. population in terms of income. Risk factors for pandemic stress and clinical difficulties may be different if we had utilized other community-based samples. Further, we adapted the PC-PTSD-5 to be specific to COVID and although the measure was internally sound in our sample, we do not have psychometric properties to speak to the validity of this change. A group of content experts developed the COVID-19 stressor measure for the study and psychometric properties are not yet published. We also did not assess other key variables such as children's precise age and gender, and specific parenting-related stressors such as childcare loss. We did not examine whether

parents' use of mental health changed after the pandemic. Future research should prioritize other sampling methods and include other relevant aspects of parenthood and parenting-specific stressors and changes.

### Clinical Implications and Conclusions

The high rates of parents reporting significant PTSS and adjustment disorder symptoms are concerning and strongly suggest the importance of targeting parents of children under age 18 in prevention efforts. Trauma-focused interventions have a strong evidence base and may be key in mitigating COVID-19-related PTSS and clinical difficulties (Galea et al., 2020). Outreach efforts should also focus on younger parents and those who identify as a person of color. Even though gender, income, and education did not emerge as significant factors for stress and psychological symptoms among parents, these variables may still have relevance for understanding a client's circumstances, responsibilities, and resources. COVID-19-related prevention efforts should also work to promote access to, perceived efficacy of, and use of, online mental health resources, including parenting-specific related tools and interventions. In light of the high levels of pandemic stress and rates of PTSS and adjustment disorder symptoms above clinical cutoff, these findings signal a strong call to action to help promote psychological well-being among families, particularly parents who have a child under age 18.

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