

**Trauma-Related Distress During the COVID-19 Pandemic In 59 Countries**

Ertl, Melissa; Trapp, Stephen; Alzueta, Elizabet; Baker, Fiona; Perrin, Paul; Caffarra, Sendy;

Yuksel, Dilara; Ramos-Usuga, Daniela; Carlos Arango-Lasprilla, Juan

**Melissa M. Ertl, M.S.**, University at Albany-State University, New York , USA

**Stephen K. Trapp, Ph.D.**, George E. Wahlen Department of Veterans Affairs Medical Center in Salt Lake City, Utah, USA

**Elisabet Alzueta, Ph.D.**, Center for Health Sciences at SRI International, Menlo Park, California, USA

**Fiona C. Baker, PhD.**, Human Sleep Research in the Center for Health Sciences at SRI International, Menlo Park, California, USA

**Paul B. Perrin, Ph.D.**, Psychology and Physical Medicine & Rehabilitation at Virginia Commonwealth University, USA

**Sendy Caffarra, Ph.D.**, Basque Center on Cognition, Brain and Language, Spain and Stanford University, Graduate School of Education and School of Medicine, USA.

**Dilara Yuksel, Ph.D.**, Human Sleep Research Lab, Center for Health Sciences at SRI International, Menlo Park, California, USA

**Daniela Ramos-Usuga** Biocruces Bizkaia Health Research Institute and Basque Country University, Spain

**Juan Carlos Arango-Lasprilla, Ph.D.**, BioCruces Vizcaya Health Research Institute in Bilbao, Spain

### **Abstract**

The COVID-19 pandemic has upended life like few other events in modern history, with differential impacts on population groups. This study examined trauma-related distress among 6,882 adults ages 18 to 94 in 59 countries during April-May 2020. More than two-thirds of participants reported clinically significant trauma-related distress. Increased distress was associated with unemployment, younger age, identifying as transgender/non-binary or as a cisgender woman, symptoms of or diagnosis of COVID-19, death of a loved one, more restrictive governmentally-imposed isolation, financial difficulties, and food insecurity. Other factors associated with distress included working with potentially infected individuals, care needs at home, a difficult transition to working from home, conflict in the home, separation from loved ones, and event restrictions. Latin American and Caribbean participants reported more trauma-related distress than participants from Europe and Central Asia. Findings inform treatment efforts and highlight the need to address trauma-related distress to avoid long-term mental health consequences.

**Keywords:** Trauma-related distress; COVID-19; pandemic; international research.

### **Significance of the Scholarship to the Public**

This study examined trauma-related distress in a large global sample of adults living in 59 countries from April-May 2020 during the COVID-19 pandemic. As one of the largest global studies on psychological distress during the pandemic, results revealed that a majority of participants endorsed clinically significant trauma-related distress. Findings underscore a great need for psychologists to support the mental health needs of individuals impacted by the pandemic.

### **Trauma-Related Distress During the COVID-19 Pandemic In 59 Countries**

The COVID-19 pandemic has led to drastic, unprecedented changes to daily life with widespread emerging research identifying robust impacts on the psychological well-being of various population groups. In addition to the high death toll in many countries and the likelihood of individuals being personally impacted by the disease (Emanuel et al., 2020), individuals around the world have also had to adapt their daily activities to reduce transmission of the virus (Fawaz & Samaha, 2020). Adaptations include physical distancing, quarantine, or isolation measures that function to reduce community spread (Wilder-Smith & Freedman, 2020). Scholars have begun to describe the alarming implications for individual and collective health and well-being based on these many changes (Pfefferbaum & North, 2020).

Previous research can guide our understanding of how the COVID-19 pandemic may be impacting the mental health of affected individuals globally. When temporary home confinement measures were enacted in Asia and Canada during the SARS and MERS outbreaks in 2003 and 2012, studies found that the measures enacted to avoid rapid community spread had mid- to long-term effects on mental health (DiGiovanni et al., 2004; Jeong et al., 2016). Quarantine measures exacerbated stress and anxiety experienced during outbreak, which can lead to psychological distress and the development of negative mental health symptoms or disorders (Brooks et al., 2020; Reynolds et al., 2008). Prior studies on past epidemics, including the SARS epidemic, Ebola epidemic, and H1N1 outbreak, found that individuals who were affected by these outbreaks tended to report anxiety and fear, depression, anger, guilt, grief and loss, stigmatization, and trauma-related distress (Chew et al., 2020).

The COVID-19 pandemic is unique in its global impact, leading to strict confinement and isolation measures extended to entire countries (Dutheil et al., 2020). Accordingly, it may also be more stressful than preceding public health crises due to its global scale, loss of life, and disruption to daily activities throughout a globalized, highly interconnected world (Safdar et al., 2020). Moreover, the economic and social impacts of the pandemic have exacerbated its toll on psychosocial health (Nicola et al., 2020).

Initial studies on the COVID-19 pandemic have shed light on how this global catastrophe has influenced mental health (Torales et al., 2020). Studies have mostly been conducted with frontline healthcare workers (e.g., Tan et al., 2020) or with students (e.g., Tang et al., 2020). However, only a few studies have examined psychological consequences among the general population (e.g., Liu, Zhang, et al., 2020; Solomou & Constantinidou, 2020; Wang, Xia, et al., 2020), and these studies have been limited to a small number of countries. Researchers have called for attention to studying trauma-related distress from the COVID-19 pandemic, calling posttraumatic stress disorder (PTSD) a potential “secondary effect” of the pandemic (Dutheil et al., 2020, p. 33). Accordingly, several studies limited to countries such as China, Italy, and the United States have investigated traumatic reactions to the pandemic among individuals diagnosed with COVID-19 (Bo et al., 2020), healthcare workers (Wang, Guo, et al., 2020), and general samples of adults (Di Crosta et al., 2020; Peterson et al., 2020). However, the extent to which individuals globally have experienced trauma-related distress has not yet been documented, and the severity of trauma-related distress globally remains unknown.

As such, guided by North’s (2004) disaster trauma theory, the present study sought to fill this large gap in the literature regarding the global impact of the COVID-19 pandemic on individuals’ reported experience of trauma-related distress. Disaster trauma theory proposes a constellation of factors that contribute to post-disaster psychopathology, such as trauma-related distress (Thordardottir et al., 2016). Risk factors in specific domains are theorized to impact the outcome of the disaster, including characteristics of the disaster (e.g., type of disaster, severity), individual characteristics (e.g., degree of exposure, demographics of the individual, quality of interpersonal supports), and secondary sequelae (e.g., injury/illness, loss of job, marital/social conflict, loss of social support, financial loss). In the present study, the ongoing crisis of the COVID-19 pandemic was conceptualized as a potentially traumatic event that could lead

to an impact on mental health for individuals affected by the pandemic. Factors related to exposure to the pandemic (i.e., event and individual characteristics, secondary sequelae) were conceptualized as important to study in order to examine how the severity of the impact of the pandemic might be linked with trauma-related distress among individuals globally.

In applying North's (2004) disaster trauma theory domains to the current COVID-19 pandemic, this study aimed to understand how degree of exposure to the pandemic, lifestyle changes due to quarantine, and associated secondary sequelae were linked with trauma-related distress among adults in the general population. For example, in regard to degree of exposure, becoming infected with COVID, developing symptoms of the disease, staying in the hospital due to the disease, or losing a close friend or family member to COVID were each theorized to represent a relatively increased level of exposure to the pandemic and confer increased trauma-related distress accordingly. Lifestyle changes as a result of the pandemic, including the level of quarantine restriction to which individuals were adhering, was also expected to represent their degree of exposure to the pandemic and the level of impact it had on their lives. Individuals adhering to a high level of restriction, such as not leaving home at all (or only leaving to buy necessities like food or medicine), were expected to experience increased trauma-related distress. Moreover, prior research supports the mental health challenges of staying at home and drastically altering one's lifestyle during a pandemic (DiGiovanni et al., 2004; Jeong et al., 2016). Examples of secondary sequelae theorized to be resulting from the COVID-19 pandemic included losing one's employment due to mass layoffs; increased familial conflict due to more frequent and constant contact of individuals in the home; or isolation from family and friends due to mandated quarantines, physical distancing efforts, and event restrictions, which were also expected to increase trauma-related distress among participants.

Counseling psychology as a field is rooted in multiculturalism and invested in international counseling and research (Douce, 2004; Heppner et al., 2008; Leong & Blustein, 2000; Leong & Ponterotto, 2003; Nilsson et al., 2019), which makes counseling psychologists well-positioned to study and address the global impact of the COVID-19 pandemic. Timely

international perspectives on factors linked with pandemic-related psychological distress are needed and may be beneficial for advocacy for resources to address the mental health implications of COVID-19 at local, national, and global levels. Left unaddressed, distress linked with the pandemic may persist and have significant long-term mental health consequences on a global scale, given how many people are affected simultaneously and throughout the world.

The purpose of this study was to examine trauma-related distress in the early months of the COVID-19 pandemic in adults in the general population from 59 countries. Data were collected several weeks after the initial round of community shutdowns and before many communities lifted restrictions. We aimed to identify pandemic-based psychosocial risk factors linked with trauma-related distress, in line with North's (2004) disaster trauma theory, which could be potentially used as cross-cultural predictors to facilitate the early detection of distress around the world. Accordingly, severity of the degree of exposure to the pandemic (e.g., infection history), as well as individual characteristics, such as home life (e.g., relationships with people at home), social support (e.g., isolation from family and friends), and economic factors (e.g., financial strain), were expected to be significantly associated with trauma-related distress in adults in the general population. It was also hypothesized that secondary sequelae of the pandemic (e.g., strictly imposed social isolation measures, the indirect socioeconomic impact of the COVID-19 pandemic) would also be linked with increased trauma-related distress. Findings will directly inform the work of counseling psychologists who are supporting individuals affected by the COVID-19 pandemic and may guide future advocacy and intervention efforts.

## **Method**

### **Participants**

A total of 9,083 individuals responded to the call to participate in the online survey. Of those responding, 2,201 participants did not consent to participate or did not complete the demographic questions needed to describe the sample and thus were excluded. The remaining

6,882 individuals were included in the final sample. The majority identified their gender as a cisgender woman ( $n = 5425$ ; 78.8%) or man ( $n = 1440$ ; 20.9%); several participants selected “Other” and identified their gender within the transgender/non-binary umbrella ( $n = 17$ ; 0.2%).

Participants reported living in 59 countries (Table 1) and ranged in age from 18 to 94 ( $M = 42.30$ ,  $SD = 13.95$ ). Most were married or in a romantic partnership ( $n = 3519$ ; 51.1%) or single and never married ( $n = 2441$ ; 35.5%), though some were divorced or separated ( $n = 791$ ; 11.5%) or widowed ( $n = 131$ ; 1.9%). Approximately one-third of the sample reported having one or more children below age 18 living in the home ( $n = 2162$ ; 31.4%). About half of participants were employed full-time ( $n = 3312$ ; 48.1%), though many were employed part-time ( $n = 1399$ ; 20.3%); others reported being a student ( $n = 638$ ; 9.3%), unemployed ( $n = 577$ ; 8.4%), retired ( $n = 541$ ; 7.9%), homemaker/staying at home ( $n = 215$ ; 3.1%), on leave ( $n = 165$ ; 2.4%), or disabled ( $n = 35$ ; 0.5%). In terms of country income classification, participants represented mostly upper-middle- ( $n = 4025$ ; 58.5%) or high-income countries ( $n = 2793$ ; 40.6%) compared to lower-middle- ( $n = 63$ ; 0.9%) or low-income countries ( $n = 1$ ; <0.1%).

## Measures

### *Trauma-Related Distress*

The Child-Revised Impact of Events Scale (CRIES-8; Perrin et al., 2005) was used to measure participants’ trauma-related distress. The CRIES-8 includes 8 items that measure post-traumatic intrusion and avoidance symptoms by asking participants whether they have experienced particular symptoms after a stressful life event in the last 7 days (e.g., “Do you have waves of strong feelings about it?” and “Do you try not talk about it?”). Items are scored on a 4-point Likert-type scale (1 = *Not at All* to 4 = *Often*), and a total score is calculated by summing responses ranging from 8 to 32, with higher scores indicating greater trauma-related distress. The CRIES-8 is brief and has received support for reliability and validity in past research with children, adolescents, and adults (e.g., individuals ages 8 to 75; French et al., 2019; Leigh et al., 2016; Perrin et al., 2005). It also has been translated into more than 20 languages, has received empirical psychometric support for maintaining its factor structure and validity after translation

through its associations with other measures of distress and exposure (e.g., Smith et al., 2001, 2003), and was designed to be clear and comprehensible. The brevity, ease of item comprehension, and broad availability of translated versions made it useful for the present large international study conducted with individuals from socioeconomically diverse countries. A score of 17 has been derived as a clinical threshold that maximizes sensitivity and specificity in detecting PTSD (Perrin et al., 2005). Evidence of internal consistency reliability of the CRIES-8 in this sample was excellent ( $\alpha = .88$ ).

### ***Impact of the Pandemic***

The Epidemic-Pandemic Impacts Inventory (EPII; Grasso et al., 2020) assessed the effect of the pandemic across various domains of personal and family life among individuals in the present study. The EPII is a newly developed measure for the COVID-19 pandemic that is comprised of 92 items in the form of statements, and participants are asked to indicate whether the pandemic has impacted them in the way described using a dichotomous response option (i.e., 1 = *Yes*, 0 = *No*). The EPII was developed by a team of clinical and developmental psychologists with expertise in assessment of stress, trauma, resilience, and coping (Grasso et al., 2020). Feedback from professionals across disciplines (e.g., social work, pediatrics, medicine) was incorporated to select and refine final items of the measure, which was accomplished via expert consensus. Bilingual and multilingual researchers involved in this study translated items of this new measure with particular attention to potential differences in dialect and colloquial language.

Due to time and space limitations in this large international study—given the significant length of the EPII measure and the intention to mitigate time burden for participants—a total of 21 items of the EPII were included. Included items were the 8 items from the Infection History subscale (e.g., “Tested and currently have this disease,” and “Someone died of this disease while in our home”), 7 items from the Work and Employment subscale (e.g., “Laid off from job or had to close own business,” and “Provided direct care to people with the disease”), 2 items from the Economic subscale (e.g., “Unable to get enough food or healthy food,” and “Unable to pay



important bills like rent or utilities”), 1 item from the Education and Training subscale (e.g., “Had a child in home who could not go to school”), 1 item from the Home Life subscale (e.g., “Increase in verbal arguments or conflict with other adult(s) in home”), and 2 items from the Social Activities subscale (e.g., “Separated from family or close friends,” and “Events/celebrations cancelled or restricted”). The team of international researchers selected these 21 items out of the total pool of 92 EPII items because they seemed to best represent the primary areas of interest for this study to assess common and tangible impacts of pandemics across a range of personal and social life domains.

Because the EPII is newly developed, psychometric properties are not yet available in the literature, and recommendations on how to score and use the measure are not provided. Guided by disaster trauma theory, which posits that the degree of exposure to the disaster, individual characteristics, and secondary sequelae are linked with the disaster outcome, the 21 items of the EPII were analyzed individually as opposed to using a total score or subscale scores. Beyond the theoretical rationale, individual analysis of items was also viewed as the most appropriate analytical choice given that EPII items intended to represent a specific given subscale of the measure do not consistently appear to represent the same construct (i.e., appear to lack face and content validity). Thus, since assessment of the same construct is a necessary assumption for measurement and for measurement reliability analyses, individual analysis was indicated (Bannigan & Watson, 2009). Consistent with this approach, prior research on disaster mental health has individually analyzed items from dichotomous scales in order to assess the factors theoretically linked with a disaster that are often manifest, as opposed to latent constructs (North, 2004; Thordardottir et al., 2016). Moreover, single-item measurement of various constructs in public health and psychology have received support when multiple-item instruments are not available or are not suitable due to lack of resources (e.g., Ahmad et al., 2014; Cunny & Perri, 1991), as in this case where other pandemic-related measures were unavailable.

### ***Quarantine Level***

To examine how the various quarantine or isolation measures implemented by governments in different countries, we created four different levels of restrictions [i.e., Level 0 = “I was not following any specific restrictions”; Level 1 = “I was following mild restrictions (i.e., Not gathering with < 10 people nor traveling outside my city or state)”]; Level 2 = “I was following moderate restrictions (i.e., Not leaving home except for working, care of another family member, exercise, or getting fresh air)”]; Level 3 = “I was following severe restrictions (i.e., Not leaving home at all, or only leaving to buy food or medicine)”. Participants were asked to report which of these levels they were adhering to over the course of the last seven days.

### ***Demographic Information***

For sample descriptive purposes, participants were also asked to answer several demographic questions. Participants responded to questions regarding their age, gender, which country they resided in currently, their romantic relationship status, their employment status, and whether or not they had a dependent under the age of 18 living in their home. Because of the low number of transgender respondents, transgender individuals were coded with participants who identified as cisgender women to facilitate comparison between these groups with participants who identified as cisgender men, given the dominant cisgender male patriarchy power structure in most countries globally (Scott-Samuel, 2009). For analysis, employment status was collapsed into two categories (i.e., *Active* = full-time, part-time, or student; *Not active* = homemaker, disability, unemployed, retired, or on leave), as was marital status (i.e., *Partnered* = married, living together; *Not partnered* = single, divorced, widowed, or separated). Participants’ countries of residence were classified by income and geographical world region according to the World Bank classification system (World Bank, 2017), which has been used in past research to classify and compare countries in studies on global trauma and distress (e.g., Koenen et al., 2017). Using this system, income was treated as an ordinal variable in the regression, and participants’ countries were coded as low-, lower-middle-, upper-middle-, and high-income countries. Coding participants’ countries of residence based on World Bank global regions of East Asia and Pacific, Europe and Central Asia, Latin America and the Caribbean, North America, and Sub-

Saharan Africa facilitated assessment of differences by global region, given that the spread of the virus differed dramatically early in the pandemic by global region (McKenzie & Adams, 2020).

### **Procedure**

The present study received IRB approval from the host university and was conducted in compliance with the Declaration of Helsinki. The survey was developed in English by researchers and translated into Italian, Spanish, German, Turkish, and French by bilingual and multilingual professionals who verified its accuracy. Where available, existing translated and validated versions of measures were used, such as for the CRIES-8 (Perrin et al., 2005). The survey was then disseminated globally to individuals using a snowball sampling technique from April 19<sup>th</sup> to May 3<sup>rd</sup>, 2020, approximately six weeks after the World Health Organization (WHO) declared the novel coronavirus (COVID-19) outbreak a global pandemic (WHO, 2020).

The snowball or convenience sampling used to recruit participants led to inadvertent overrepresentation of participants from North and South America. The main survey dissemination method was social media (e.g., WhatsApp, Twitter, Instagram) and professional mailing listservs for psychology, neuropsychology, rehabilitation psychology, and public health, and individuals were asked to share the call to participate widely. Facebook ads promoted participation among the general population. Participants were invited to complete the online, cross-sectional survey to assess the impact of the pandemic. Prior to informed consent, participants were informed that participation was voluntary and anonymous so their responses would not identify them. The survey was self-paced and required approximately 10 minutes to complete. Participants did not receive compensation for participation.

### **Statistical Analyses**

Descriptive statistics and correlations were calculated for study variables. Frequencies were calculated for items of the EPII to examine the number of participants who reported an impact of the pandemic on various domains of their personal lives, which are reported elsewhere (Alzueta et al., 2021). See Table 2 for a depiction of bivariate associations among demographic variables and participants' trauma-related distress. The main statistical analysis was a

hierarchical stepwise multiple linear regression with trauma-related distress as the outcome variable. Guided by the network of risk factors posited to contribute to post-disaster psychopathology according to disaster trauma theory (North, 2004), individual characteristics that served as covariates were included in Step 1, including: (a) gender (cisgender man vs. cisgender woman or transgender/non-binary), (b) age, (c) country income classification, (d) partnered vs. unpartnered, (e) actively employed vs. unemployed, and (f) dependent under 18 years of age in the home vs. no dependent under age 18. Individual characteristics that represented individual degree of exposure to the pandemic were included in Step 2 (i.e., 8 EPII Infection History COVID-19 exposure variables). Step 3 included individual's degree of lifestyle changes as a result of the pandemic (i.e., quarantine restriction level), and Step 4 included a number of secondary sequelae of effects of the pandemic on participants' lives (i.e., a total of 13 EPII items across domains of Work and Employment, Economic, Education and Training, Home Life, and Social Activities). Next, trauma-related distress scores were compared by global region using an analysis of covariance (ANCOVA), covarying for the demographics included in Step 1 of the regression. Participants from South Asia ( $n = 4$ ) were excluded from the ANCOVA because the sample size was too small.

## Results

### Descriptives and Correlations

Participants' average trauma-related distress score was 19.60 ( $SD = 6.08$ ), reflecting a clinically significant level of trauma-related distress among the majority of participants in the full sample. A small proportion of participants (i.e., 5.7%) did not report any trauma-related distress ( $n = 392$ ). Scoring 17 or above has been found to suggest severity of trauma-related distress consistent with a diagnosable disorder (e.g., Perrin et al., 2005), and in this study, 68.5% of participants scored at 17 or above. In the correlation matrix, increased trauma-related distress was associated with identifying as a cisgender woman or transgender/nonbinary, younger age, and being romantically unpartnered. Conversely, country income classification, employment status, and having a

dependent child in the home under 18 years of age were unrelated to trauma-related distress.

### **Multiple Regression**

A hierarchical linear regression was conducted to examine whether variables would predict trauma-related distress among participants (see Table 3). Step 1 was statistically significant,  $F(6, 6875) = 39.95$ ,  $R^2$  change = .03,  $p < .001$ . Demographic variables that were significant and unique predictors of trauma-related distress included gender, age, and employment status.

In Step 2, the model remained statistically significant with the addition of the COVID-19 exposure predictors, suggesting these items explained significantly more variance in trauma-related distress beyond Step 1,  $F(8, 6867)$  change = 8.07,  $R^2$  change = .01,  $p < .001$ . Currently having symptoms of the disease but not having been tested, testing positive for the disease and currently having it, having had (in the past) symptoms of this disease but never being tested, testing positive for the disease but no longer having it (in an inverse direction), experiencing someone in their home die of the disease, and experiencing the death of a close friend or family member from the disease each significantly contributed to trauma-related distress.

In Step 3, quarantine level was significantly and positively associated with trauma-related distress,  $F(1, 6866)$  change = 17.43,  $R^2$  change = .002,  $p < .001$ . For Step 4, which added variables that assessed the impact of the COVID-19 effects on one's life, the overall model was significant,  $F(13, 6853)$  change = 36.47,  $R^2$  change = .06,  $p < .001$ . In this step, significant predictors of trauma-related distress included being laid off from work or having to close their business, experiencing reduced work hours or being furloughed, having to continue to work despite close contact with people who might be infected, experiencing difficulty doing work well because of the care needs of people at home, having a hard time transitioning to working from home, being unable to get enough food or healthy food, being unable to pay important bills like rent and utilities, experiencing an increase in verbal arguments or conflict in the home, being separated from family or close friends, and experiencing cancellation or restriction of events or

celebrations significantly contributed to increased participants' reports of trauma-related distress. The overall model explained 10.7% of the variance in trauma-related distress.

### **ANCOVA**

The ANCOVA revealed a statistically significant effect of global region,  $F(4, 6867) = 4.30, p = .002$ , partial  $\eta^2 = .003$ . The covariate-adjusted estimated marginal means for trauma-related distress with error bars representing 95% confidence intervals appear in Figure 1. Bonferroni-corrected follow-up pairwise comparisons suggested that participants from Latin America and the Caribbean ( $M = 19.89, SE = 0.13$ ) had higher trauma-related distress scores than participants from Europe and Central Asia ( $M = 18.96, SE = 0.20; p = .01$ ). No other pairwise comparisons were statistically significant.

### **Discussion**

The present study, conducted with a general sample of adults ages 18-94 in 59 countries, is one of the first and largest to document the psychological effects of the COVID-19 pandemic internationally by assessing participants' trauma-related distress in relation to the personal impacts they experienced in the early months of the pandemic. In line with disaster trauma theory (North, 2004; Thordardottir et al., 2016), this study identified an array of potential risk factors for trauma-related distress among individuals during the pandemic. Participants reported high rates of clinically significant levels of trauma-related distress, which were significantly associated with levels of exposure to the virus and personal impacts of the pandemic. These findings are in line with other studies documenting increased psychological distress as a result of the pandemic (Liu, Zhang et al., 2020; Solomou & Constantinidou, 2020; Tan et al., 2020; Tang et al., 2020; Wang, Xia, et al., 2020). Findings suggest that the mental health needs of individuals affected by COVID-19 are noteworthy and necessitate an investment of care and resources to address trauma-related distress—which may have the potential to persist over time and create vulnerabilities to other mental health symptoms and disorders (Brooks et al., 2020; Reynolds et al., 2008).

Notably, in this study, COVID-related life changes were strongly associated with trauma-related distress above and beyond demographic covariates and exposure to COVID-19, which is consistent with expectations of disaster trauma theory that secondary sequelae significantly impact mental health after a disaster event. These findings underscore the notion that the social and economic impacts of the pandemic are additional major risks for trauma-related distress. For example, this study identified a range of social stressors linked with trauma-related distress, including job loss, reduced work hours, financial uncertainty, food insecurity, increased care work at home, interpersonal challenges or conflict in the home, and separation from friends and family. Other studies have similarly identified instability in home environments during quarantine and confinement, such as financial strain or social isolation, as risk factors for domestic abuse (Usher et al., 2020). Notably, numerous countries found a pervasive uptick in intimate partner violence during the COVID-19 pandemic (Ertan et al., 2020). Taken together, results demonstrate a critical need for accessible and affordable mental healthcare and supportive social services for individuals who have experienced such social stressors due to the pandemic.

Even individuals who did not lose their jobs or livelihoods were at risk for trauma-related distress. For example, participants who remained employed but were at risk for virus exposure at work or individuals who were having difficulty adjusting to working from home also reported higher levels of trauma-related distress. These cross-sectional findings may suggest that the pandemic takes a broad psychological toll on individuals' daily lives that can make them vulnerable to experiencing distress and struggling at work as a result of this distress. Furthermore, experiencing event cancellations and life activity restrictions were associated with increased trauma-related distress, which were likely common experiences in some countries (e.g., Sjödin et al., 2020). Cancellations of major life milestones, including weddings or graduations, may be particularly distressing for individuals. These results highlight the pervasiveness of COVID-related risk factors and the widespread potential to experience trauma-related distress due to changes and restrictions brought on by the pandemic.

The range of human consequences associated with the pandemic have been immense. Many countries have sustained large death tolls, which has led some to note the number of worldwide casualties may exceed the deadliest natural disasters in recent history (Eisma et al., 2020). In this study, participants who experienced the death of an acquaintance or a loved one (e.g., family member or friend) were more likely to report trauma-related distress, and this effect held whether the individual who died resided in the participants' home or not. Many individuals who lost a friend or loved one during the pandemic may have encountered a challenged grieving process due to not being able to be physically close to a loved one at the end of their life or together with family at a memorial (Ingravallo, 2020). Bereavement and adjustment to loss of a loved one is likely to be complicated when after-death rituals do not provide an opportunity to say goodbye in a meaningful way and engage in activities that promote social support (Burrell & Selman, 2020). Psychologists working with clients will need to address potential complex bereavement or prolonged grief reactions among individuals who experienced the death of a loved one during the pandemic (Eisma et al., 2020).

The level of quarantine restriction was weakly but positively linked with trauma-related distress among participants. Previous studies have found similar results, including that home-quarantining was associated with psychological distress, perhaps due to social isolation, large changes to daily routines, and perceptions of constrained freedom (Brooks et al., 2020; Casagrande et al., 2020). Governments have had to balance the costs and benefits of enacting restrictive measures in order to control the spread of COVID-19 which have been found to be critical toward reducing widespread outbreaks (Sjödén et al., 2020); however, greater resources are needed to address the secondary consequences of social isolation, reduced social support, and increased psychological distress resulting from such measures.

This study also sheds light on how the contracting COVID-19 can impact trauma-related distress levels. Testing positive for the COVID-19 was associated with increased trauma-related distress, although no longer having COVID-19 was associated with reduced trauma-related distress. Previous studies have documented how experiencing COVID-19 symptoms and testing



positive for the virus were linked with trauma-related distress among individuals in Spain (González-Sanguino et al., 2020) and how disease severity was a risk factor for PTSD symptoms for recovered COVID-19 patients living in China (Liu, Baumeister, et al., 2020). Scholars have suggested that COVID-19 survivors may experience similar rates of PTSD to individuals who have survived MERS and SARS or similar experiences of hospitalization (Kaseda & Levine, 2020), although the inverse association was found in the current study (i.e., recovering from the disease was linked with reduced distress). Additionally, currently having symptoms of the COVID-19, and having had symptoms previously, were both linked with increased trauma-related distress when participants did not have the diagnostic clarity of a test. These results are in line with research suggesting that fear of the virus is linked with psychological distress (Fitzpatrick et al., 2020). Together, this speaks to the importance of psychologists who have an emphasis in rehabilitation and health psychology in addressing the needs of individuals recovering from COVID-19.

In this study, participants who tended to report the most trauma-related distress were younger adults, cisgender women and transgender/non-binary individuals, and those who were unemployed. These findings are highly congruent with the literature that has identified a higher prevalence of trauma-related distress among women compared to men. Recent studies conducted in Italy and the United States during the early months of the pandemic found that young adult women were more likely to experience sleep disturbances, anxiety, and distress (Casagrande et al., 2020; Mazza et al., 2020; Peterson et al., 2020). One potential reason that women may have reported relatively more distress in the present study compared to men is the increased burden of care work; prior to the pandemic, women already were performing the large majority of unpaid care work (Moreira da Silva, 2019), but emerging research suggests that the pandemic crisis and the subsequent shutdown response resulted in a dramatic increase in this burden for women (Power, 2020). This study, too, found a strong association between difficulty completing care work for people in the home with trauma-related distress among participants, underscoring this potential explanation. In regard to increased distress among younger adults, studies consistently

show that stress reduces over the lifetime toward lower levels in old age (e.g., Thomas et al., 2016), in part due to improved coping skills among older adults (Yeung & Fung, 2007). Newer research has suggested that young adults may be more susceptible to the effects of the COVID-19 pandemic (Casagrande et al., 2020) due to greater media exposure, excessive financial strain, and increased workload (Liu, Zhang, et al., 2020). Interestingly, correlational associations revealed that being unpartnered was linked with higher levels of distress than being partnered, although this finding was nonsignificant in regression results when controlling for other demographic factors more strongly linked with distress. Conversely, being unemployed did not demonstrate a direct correlation with distress but was weakly and significantly linked with increased distress in regression results, which may be due to suppressor effects (i.e., wherein analyzing the employment status variable with other demographic variables may control for criterion-irrelevant variance, thereby boosting its predictive power; Watson et al., 2013). Nonetheless, studies conducted in Israel and Italy during the pandemic have found that unemployed individuals are at particularly high risk for psychological distress (Achdut & Refaeli, 2020; Mazza et al., 2020), which underscores that this weak but significant association was found in other recent studies.

In assessing differences in trauma-related distress by global region, countries belonging to the Latin American and Caribbean cluster demonstrated a significantly higher level of trauma-related distress compared to countries in Europe and Central Asia. It is challenging to compare symptoms across different cultures and countries (Baxter et al., 2013), and as such, these findings should be interpreted with great care. Previous studies have found widely varying rates of PTSD by country (Koenen et al., 2017). Scholars suggested that because the pandemic struck Latin America and the Caribbean at a period in which their economies were already weakened, high unemployment and poverty may have led to intensified stress and mental health challenges in this region compared to others (Wasserman et al., 2020). Latin American and Caribbean countries may be disproportionately affected by the COVID-19 pandemic due to a variety of socioeconomic factors, including income instability, chronic deep poverty, a high proportion of

older individuals, and tenuous economies that rely heavily on tourism (Llibre-Guerra et al., 2020; Quashie et al., 2018), in addition to recent health and weather events that may have compounded the impact of other ongoing stressors (e.g., dengue outbreaks, severe droughts, hurricanes, floods; Office for the Coordination of Humanitarian Affairs, 2019). Counseling psychologists, with values for international social justice, must use our training and skills to support the increased mental health needs of individuals impacted by COVID-19 globally, with particular attention to under-resourced places without adequate mental health infrastructure.

This large-scale study with nearly 6,900 participants examined many factors posited to be linked with trauma-related stress during the COVID-19 pandemic based on disaster trauma theory (North, 2004). Particularly in large data studies like the present research, interpretation of effect size is critically important given the potential for inconsequential effects to be detected (Kaplan et al., 2014). Results of the major analysis revealed an adjusted  $R^2$  statistic of .103, indicating that approximately 10.3% of variability in trauma-related distress was due to the factors examined. This suggests that myriad other factors that were not assessed in this study may have contributed to significant distress among participants. Future research should also consider other factors that may be stronger predictors of trauma-related distress among participants, including prior trauma history, psychiatric history, personality factors, or substance use (North, 2004; Thordardottir et al., 2016).

### **Limitations**

Despite strengths of this study, which include recruiting participants from 59 countries to study international effects of the pandemic, results should be interpreted in light of several limitations. The COVID-19 pandemic is an ongoing, rapidly evolving crisis affecting all countries globally, and yet differentially affecting countries based on timing and extent of the outbreak and associated socioeconomic repercussions. This cross-sectional study investigated the effects of the COVID-19 on an adult sample in several global regions during the first few months of the pandemic (i.e., April-May 2020). As such, some countries were experiencing the pandemic to a vastly different extent where the outbreak was more severe during that time

period. Importantly, most of the countries in this study were experiencing a critical peak in the pandemic, and all participants' countries had enacted some kind of social isolation measures at the time of data collection. However, use of the snowball sampling procedure precludes generalizability of these results to the whole population of any given country, and it is important to note that participants needed access to the Internet to participate in this online study. As a cross-sectional study, directionality of the associations investigated herein cannot be concluded, and longitudinal research is needed to examine the impact of the pandemic over time.

Due to low sample sizes of transgender/non-binary participants, analyses in this paper analyzed women-identified participants together with transgender/non-binary participants in comparison to men. As such, future research must investigate the particular contextual experience of transgender, gender non-binary, and gender non-conforming individuals during the COVID-19 pandemic. Holding multiple marginalized and minoritized identities may impact how individuals navigate the world and experience the stress of the pandemic more specifically (Herman & O'Neill, 2020). Relatedly, another identity that is important for future research is status as a caregiver for older adults; scholars have noted that the pandemic response is "gender-regressive," such that women are taking on a greater proportion of the care burden in comparison to men, and particularly so for older adult family members, whose greater care needs may have increased during the pandemic (Power, 2020, p. 68). Future studies should delineate how increased care needs for older adults may be a contributing factor or explanatory mechanism for the association between gender and trauma-related distress.

The dearth of measures designed to assess the construct of pandemic-related impacts with adequate or strong support for reliability and validity was a major methodological challenge for this study. Because no other measure was available, the newly designed EPII was used to study the effects of the pandemic (Grasso et al., 2020), which has not received psychometric support due to a lack of research. Researchers in this study examined items individually in the analysis, which is in line with prior studies guided by disaster trauma theory (e.g., Thordardottir et al., 2016), but future research must investigate reliability and validity of the EPII and other disaster

trauma measures to better elucidate the psychometric properties of this and other commonly used measures. In addition, the CRIES-8 was primarily designed for use with children, though it has received empirical support for use with adolescents, young adults, and adults ages 8 and above (Leigh et al., 2016), including a study of trauma-related distress with adults ages 18 to 75 (French et al., 2019). The CRIES-8 was selected for use in this study because of its wide translation to other languages and ease of comprehension that benefited this international research study, but a high degree of caution should be employed when attempting directly to infer clinically significant PTSD rates to this international adult population. Specifically, despite the high sensitivity and specificity supported for this measure in past research in identifying individuals at risk for PTSD, the cutoff score of 17 maximizes sensitivity and minimizes the likelihood of failing to identify an individual with PTSD—and thus may overestimate the proportion of the sample at risk for PTSD (Perrin et al., 2005).

Finally, 24 of the countries included in this study had fewer than 5 participants who responded to the survey, which limits generalizability to these countries, as the majority of participants (66.5%) were from 5 of the 59 countries (i.e., Argentina, Colombia, Mexico, Spain, the United States). It is worth noting that the large majority of participants (i.e., 99.1%) in this study resided in countries with upper-middle- or high-income classification according to the World Bank classification system (World Bank, 2017) due to the convenience sampling method employed. As prior research has uncovered differences in lifetime prevalence of PTSD based on country income level—with high-income countries reporting a higher prevalence of PTSD than low- and middle-income countries (Koenen et al., 2017)—findings should be interpreted carefully. Specifically, and in line with this prior research, results of this study may demonstrate higher levels of trauma-related distress given the oversampling of individuals from upper-middle or high-income countries, and findings cannot be generalized to low-income countries globally.

### **Implications for Practice, Advocacy, Education/Training, and Research**

Findings of the present study have notable implications for clinical practice. The sheer extent of trauma-related distress reported by participants in this study signal what could be a

mental health crisis that may need to be addressed at later stages of the pandemic and post-pandemic, leading scholars to call for a public health approach to the mental healthcare response (Carbone, 2020). Due to the clinical acumen in cross-cultural psychology, results of the present study are directly applicable to the work of psychologists providing care to clients affected by the COVID-19 pandemic. The results also inform counseling and treatment efforts with clients reporting trauma-related distress. Specifically, findings provide information on novel pandemic-related factors (e.g., COVID-19 diagnosis, death of a friend or loved one), as well as relatively benign, more universal pandemic-related experiences (e.g., restrictions or cancellation of events) that pose a risk for experiencing trauma-related distress. Because of the extensive need for mental health support reported by participants in this study, psychologists should consider the ways in which tele-therapy and online interventions might be designed, implemented, leveraged, and made available internationally to fill this critical need (Pierce et al., 2020). This is a necessity given that as many as 30-50% of a population affected by a disaster may go on to experience acute stress disorders that could lead to PTSD, and individuals affected by PTSD are at higher risk for suicidal ideation, suicidal attempts, and deaths by suicide (Dutheil et al., 2020). Psychologists working with clients can promote social interactions that maintain physical distance; foster and model healthy coping skills; provide psychoeducation on stress-reduction techniques; and empower individuals to regain their loss of control through establishing healthy routines, optimizing work settings, and reorganizing roles at home to cope with changes.

Given that prior global research has found that only half of individuals with severe PTSD report receiving any mental health treatment (Koenen et al., 2017), counseling psychologists must engage in advocacy and outreach efforts to make services accessible to underserved populations. Particularly because minoritized and marginalized groups may be less likely to seek, receive, and remain engaged in mental health treatment (Tambling et al., 2020), advocating for broadly available and culturally responsive treatment options during the COVID-19 pandemic is a social justice issue of great consequence. Reducing barriers to treatment, providing low- and

no-cost telehealth treatment options, and offering mental health relief internationally, where possible, may remediate problems with access to quality care.

Counseling psychologists have been called to engage in culturally sensitive engagement in disaster relief efforts internationally (Inman et al., 2019). However, few counseling psychology training programs offer courses in disaster mental health work. Offering disaster relief curricula (Inman et al., 2019) and providing applied training experiences for trainees (e.g., immersion programs; Heppner et al., 2012) will help foster the necessary knowledge, skills, and awareness needed to provide quality mental health care that is ethically sound and culturally responsive. Given that the COVID-19 pandemic has affected the global population, perhaps local opportunities for training psychologists to support individuals affected by the pandemic may be leveraged via online applications or telehealth services to support individuals internationally.

Results of this study provide several implications for future research on trauma-related distress during the pandemic. Firstly, counseling psychologist researchers should study other factors posited to be associated with trauma-related distress during the pandemic according to disaster trauma theory, which may explain a greater proportion of variability in trauma-related distress among participants (e.g., personality factors, prior trauma and psychiatric history, substance use; North, 2004; Thordardottir et al., 2016). Researchers should qualitatively and quantitatively investigate factors linked with trauma-related distress and other mental health indices during the pandemic for multiply marginalized and minoritized groups that were underrepresented or unstudied in this research, including transgender, non-binary, or gender expansive individuals and lesbian, gay, bisexual, and queer individuals (Herman & O'Neill, 2020; Peterson et al., 2020). Moreover, studies should focus on other groups expected to be particularly affected by pandemic conditions, including individuals experience intimate partner violence (Ertan et al., 2020). Designing, implementing, and evaluating interventions for such marginalized groups is in line with counseling psychology values of social justice and advocacy and may alleviate the distinct dearth of services for these groups in the pandemic.

## **Conclusion**

The present study represents one of the only large, international investigations of trauma-related distress as a result of the COVID-19 pandemic. Results uncovered links between the drastic life changes related to the pandemic and trauma-related distress for participants, demonstrating a critical need for mental health interventions that address these stressful conditions. Addressing the mental health implications of the COVID-19 pandemic is a critical and essential effort for psychologists tasked with promoting well-being for clients and communities, particularly for the most marginalized and minoritized among us who “bear the intersectional brunt of structural inequality” (Bowleg, 2020, p. 917).



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Table 1. *Demographic characteristics of the sample.*

<b>Country</b>	<b><i>n</i></b>	<b>%</b>	<b>Country</b>	<b><i>n</i></b>	<b>%</b>
Argentina	1581	23.0	Netherlands	6	<0.1
Australia	35	0.5	New Zealand	20	0.3
Austria	6	0.1	Pakistan	1	<0.1
Barbados	2	<0.1	Panama	27	0.4
Belgium	73	1.1	Paraguay	25	0.4
Bolivia	20	0.3	Peru	308	4.5
Brazil	5	0.1	Poland	5	0.1
British Virgin Islands	1	<0.1	Portugal	6	0.1
Canada	40	0.6	Republic of Korea	1	<0.1
Chile	192	2.8	Romania	1	<0.1
China	1	<0.1	Serbia	1	<0.1
Colombia	738	10.7	Singapore	1	<0.1
Costa Rica	15	0.2	South Africa	81	1.2
Croatia	1	<0.1	Spain	504	7.3
Cuba	2	<0.1	Swaziland	2	<0.1
Cyprus	4	0.1	Sweden	11	0.2
Czech Republic	2	<0.1	Turkey	170	2.5
Denmark	2	<0.1	Uganda	1	<0.1
Dominican Republic	9	0.1	United Arab Emirates	2	<0.1
Ecuador	200	2.9	United Kingdom	198	2.9
Egypt	1	<0.1	United States	917	13.3
El Salvador	9	0.1	Uruguay	61	0.9
Finland	1	<0.1	Venezuela	26	0.4
France	196	2.8	Vietnam	1	<0.1
Germany	230	3.3			
Greece	3	<0.1			
Guatemala	22	0.3			
Honduras	30	0.4			
Hungary	1	<0.1			
India	1	<0.1			
Ireland	3	<0.1			
Italy	236	3.4			
Japan	5	0.1			
Malaysia	2	<0.1			
Mexico	837	12.2			

Table 2. *Correlation matrix among demographics and trauma-related distress.*

Variable	1	2	3	4	5	6
1. Trauma-related distress	1.00					
2. Gender <sup>1</sup>	-.172***	1.00				
3. Age	-.065***	.032**	1.00			
4. Country income classification	-.010	.033**	.079***	1.00		
5. Partnered vs. unpartnered	-.025*	.027*	.312***	.041***	1.00	
6. Employed vs. unemployed	-.010	.012	-.251***	-.055***	-.046***	1.00
7. Dependent under age 18	.000	-.031**	-.067***	-.093***	.300***	.069***

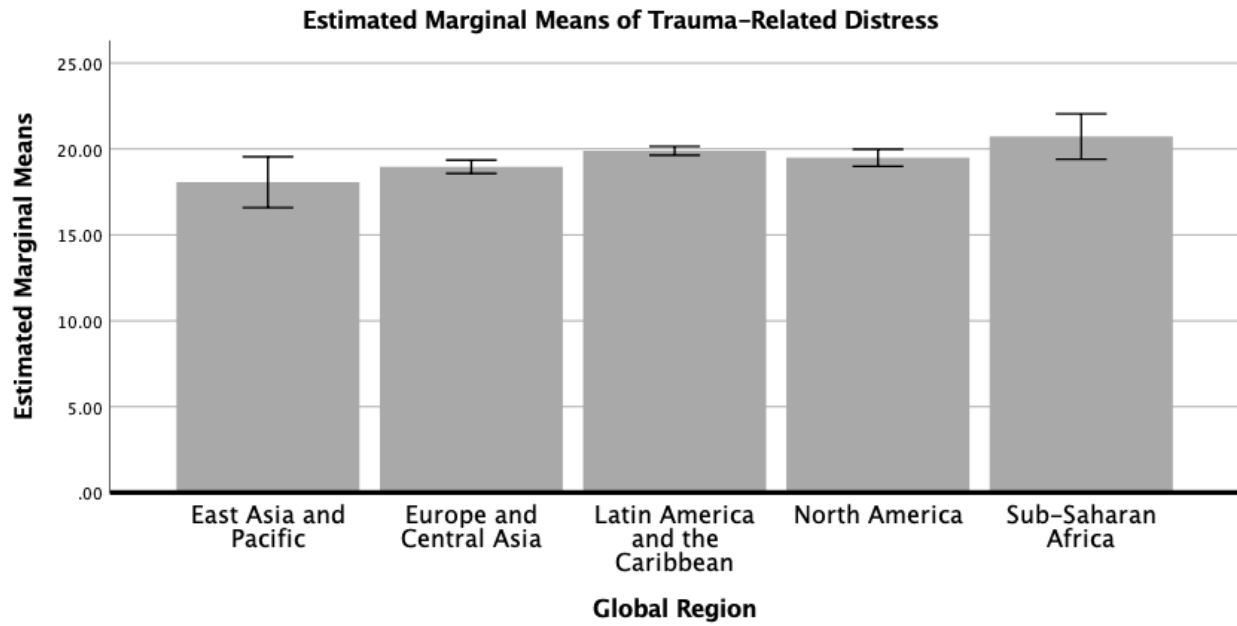
*Note.* \* =  $p < .05$ ; \*\* =  $p < .01$ , \*\*\* =  $p < .001$ . <sup>1</sup>Gender was coded as 1 = Cisgender woman or transgender/non-binary, 2 = Man.

Table 3. Multiple regression predicting trauma-related distress with standardized  $\beta$ -weights presented from Step 4.

Predictor Variable	Trauma-Related Distress	
	$\beta$	<i>p</i> -value
Step 1		
Gender	-.144	< .001***
Age	-.022	.083
Country income classification	.032	.013*
Partnered vs. not partnered	.003	.795
Employed vs. unemployed	-.041	.001**
Dependent < 18 years old in home vs. not	-.029	.075
Step 2		
Currently have symptoms of this disease but have not been tested	.020	.097
Tested and currently have this disease	.027	.031*
Had symptoms of this disease but never tested	.020	.104
Tested positive for this disease but no longer have it	-.034	.012*
Got medical treatment due to severe symptoms of this disease	.020	.111
Hospital stay due to this disease	-.003	.796
Someone died of this disease while in our home	.030	.009**
Death of close friend or family member from this disease	.036	.002**
Step 3		
Quarantine level	.054	< .001***
Step 4		
Laid off from job or had to close own business	.029	.022*
Reduced work hours or furloughed	.042	< .001***
Had to continue to work in close contact with people who might be infected	.031	.016*
Provided direct care to people with the disease	.022	.074
Increase in workload or work responsibilities	-.005	.721
Hard time doing job well because of needing to take care of people in the home	.044	.001**
Hard time making the transition to working from home	.089	< .001***
Unable to get enough food or healthy food	.068	< .001***
Unable to pay important bills like rent or utilities	.045	.001**
Had a child in home who could not go to school	-.013	.404
Increase in verbal arguments or conflict with other adult(s) in home	.118	< .001***
Separated from family or close friends	.075	< .001***
Events/celebrations cancelled or restricted	.029	.020*

Note. \* =  $p < .05$ ; \*\* =  $p < .01$ , \*\*\* =  $p < .001$ . All effects are presented from the final step.

Figure 1. *Covariate-adjusted trauma-related distress means with 95% confidence intervals by global region.*



*Note.* Error bars represent 95% confidence intervals.