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The Impact of the COVID-19 Pandemic on People with Disabilities:
Pandemic-Related Stress and Contribution to the Disability Community
as Predictors of Posttraumatic Growth

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A Thesis submitted in Partial Fulfillment of the Requirements for the Degree of
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Abstract

People with disabilities (PWD) face many existing barriers and unjust conditions that contribute to negative psychosocial outcomes. PWD have also been disproportionately impacted by the COVID-19 pandemic, which has introduced unique sources of stress and trauma in the disability community. However, scant research attention has been paid toward its effects on the mental health of PWD, especially factors that may buffer risk or foster positive psychological outcomes. Therefore, this study investigates the impact of pandemic-related stress on posttraumatic growth (PTG), or the perceived psychological benefits accrued as a result of struggle with a major life challenge or crisis (Tedeschi & Calhoun, 1996). It was hypothesized that pandemic stress would predict PTG. Participants ($N = 468$) were recruited online via disability-focused social media platforms and email listserves, and comprised a diverse sample in terms of both disability and demographic characteristics. In a preliminary simple linear regression analysis, higher pandemic stress predicted lower PTG ($p < .001$). However, once a number of other factors were introduced through hierarchical regression analysis, pandemic stress no longer significantly predicted PTG. Rather, direct and indirect COVID exposures, strength of disability identity (specifically, contribution to the disability community), and numerous demographic and disability-related covariates were significantly associated with PTG ($p < .05$), suggesting that a broad range of factors work to impact pandemic-related PTG among PWD.

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Introduction

The novel coronavirus disease 2019 (COVID-19) has resulted in considerable illness and loss of life worldwide since it was first identified toward the end of 2019 (World Health Organization, 2020a, 2020b). As of April 2021, there have been over 30 million confirmed cases and over 500,000 deaths in the United States alone due to COVID-19 (Centers for Disease Control and Prevention, 2021). In addition to directly eliciting anxiety surrounding viral transmission and mortality, the COVID-19 pandemic has introduced myriad stressors, such as record unemployment (Bureau of Labor Statistics, 2020), and social isolation and loneliness due to public health mitigation efforts (Hwang et al., 2020). Indeed, research has indicated that the COVID-19 pandemic has negatively impacted mental health, with adults in the United States reporting substantial increases in depressive and anxiety disorder symptoms compared to pre-pandemic rates (Czeisler et al., 2020; Ettman et al., 2020; Salari et al., 2020; Vindegaard & Benros, 2020).

Emerging data have also begun to suggest trauma-related psychological symptoms as a potential mental health outcome of COVID-19 pandemic exposure. For example, among a survey of American adults, 26.3% of respondents surveyed over the April-June period of 2020 indicated symptoms of a trauma- and stressor-related disorder related to the pandemic (Czeisler et al., 2020). Similar investigations (e.g., Forte et al., 2020; Liu, Zhang, & Wong et al., 2020) as well as a recent meta-analysis (Xiong et al., 2020) have reported increases in PTSD symptomology in the general population, with another study (Vindegaard & Benros, 2020) revealing a strikingly high prevalence (~96%) of self-reported posttraumatic stress symptoms among COVID-19 patients.

Posttraumatic Growth

While the negative psychological impacts of COVID-19 continue to be characterized and addressed, some researchers have also begun to examine how pandemic-related trauma and stress lead to positive psychological outcomes, or more specifically, posttraumatic growth (PTG) — i.e., the positive psychological changes accrued as a result of struggle with a major life challenge or crisis (Calhoun, Tedeschi, Cann, & Hanks, 2010; Tedeschi & Calhoun, 2004; Tedeschi & Calhoun, 1996). This construct captures psychological change in five domains: relating to others, new possibilities, personal strength, spiritual change, and appreciation of life (Tedeschi & Calhoun, 1996). PTG differs from resilience and related constructs in that the individual has gained some kind of benefit and has developed beyond their pre-crisis level of psychosocial functioning (e.g., feeling that one has “become a stronger person” compared to pre-trauma; Zoellner & Maercker, 2006). PTG develops in response to stress that has arisen from trauma or a major life challenge; therefore, traumatic exposure(s) and subsequent traumatic stress are necessary pre-conditions for PTG to occur. However, it is also important to note that both positive and negative post-trauma outcomes are not mutually exclusive. Rather, these outcomes represent two separate post-trauma trajectories that may overlap or coexist with one another; for example, a person with PTSD can also report high PTG (Cao et al., 2018).

A number of factors are thought to contribute to the development of PTG after trauma. Some known predictors of PTG include active coping and deliberate rumination (i.e., voluntarily reflecting on the traumatic event) (Huecker, Shreffler, & Danzl, 2020; Cann et al., 2011). Processes related to adaptive emotion regulation (i.e., recognizing, controlling, and responding to one’s own emotional state), such as emotional reappraisal, are also positively associated with PTG (Orejuela-Dávila, Levens, Sagui-Henson, Tedeschi, & Sheppes, 2019). In addition to

internal processes, external sources of resilience such as social support tend to promote the development of PTG (Huecker, Shreffler, & Danzl, 2020). PTG has been studied in the aftermath of a wide range of traumatic events, including but not limited to bereavement (e.g., Drapeau et al., 2019; Eisma et al., 2019), life-threatening illnesses like cancer (Casellas-Grau, Ochoa, & Ruini, 2017), and natural disasters (e.g., Kyutoku et al., 2021; Lowe, Manove, & Rhodes, 2013). PTG has also been documented in the context of past pandemics, such as in survivors of SARS (Cheng et al., 2006); however, literature in this area is scant.

A relatively small but growing number of studies have investigated the impact of the COVID-19 pandemic on PTG. Much of this literature has specifically assessed PTG among healthcare workers (e.g., Cui et al., 2021; Yıldız, 2021), with one study (Chen et al., 2020) finding that exposure to COVID-19 patients as well as higher reported posttraumatic stress were associated with higher PTG. However, a number of studies have also looked at the impacts of the COVID-19 pandemic on PTG in the general population. For example, among one sample of U.S. residents, higher PTG was predicted by greater perceived health risk, as well as greater perceived social strain and higher reported social support (Zhou et al., 2020b). In another study that sampled Chinese university students, fewer confirmed cases in participants' geographic areas predicted higher PTG whereas knowing at least one person who has been isolated due to the virus predicted lower PTG (Chi et al., 2020).

Although the mental health impact of the COVID-19 pandemic has been ubiquitous, certain populations may be at elevated risk of poor or worsened mental health, especially in the context of stress and trauma. The disability community in particular has been disproportionately affected by the pandemic and its associated challenges, in large part due to how the pandemic

has exacerbated existing barriers and sources of oppression in addition to presenting new challenges (Lund et al., 2020).

Disability in Context

People with disabilities (PWD) comprise a heterogeneous population with a diverse set of needs and experiences. The World Health Organization (WHO) defines *disability* as an umbrella term for any number of impairments, activity limitations, or participation restrictions arising from how an individual's health status interacts with personal and environmental factors (WHO, 2001). This definition acknowledges that disability is not a function of health status alone, but instead always occurs within some larger societal context that shapes how a health condition or impairment is experienced. Placing further emphasis on the societal factors shaping the experience of disability, many have espoused the *social model* of disability. This model argues that PWD are not necessarily disabled by their health condition in and of itself, but are instead primarily disabled by alterable social and institutional barriers that prevent full participation in society, such as inaccessibility of the built environment (e.g., stairs vs. ramps, inadequate door width to allow for wheelchair entry, etc.), inaccessibility of communication and social arrangements (e.g., lack of workplace accessibility for performing different modes of work; inaccessible presentation of data or information), and negative attitudes and stigma that lead to the dehumanization and social exclusion of PWD (Goering, 2015; Oliver, 2013; Oliver, 1990).

It has been suggested that PWD be considered a health disparity population given such barriers, where many of the population-level health disparities observed among PWD may not primarily be the cause of underlying disability alone but rather the cumulative result of oppression, both historic and present-day (Krahn, Walker, & Correa-De-Araujo, 2015). PWD have historically been targets of widespread institutionalization (Krahn et al., 2015); involuntary

sterilization and other eugenic practices (Krahn et al., 2015; Reilly, 2015); and acts of direct violence such as mass murder (Lund et al., 2020; Friedlander, 2001). Despite steps made toward establishing legal protections and justice for this population, institutional injustices toward PWD continue to persist. For example, PWD are often not accounted for in evacuation plans and crisis response efforts during natural and environmental disasters (WHO, 2013). More broadly, PWD continue to face myriad sources of oppression such as difficulty accessing healthcare and financial assistance, employment and housing discrimination, increased risk of both violent and sexual victimization, and general stigma that further contributes to the oppression of and discrimination toward PWD (Krahn et al., 2015), with one investigation reporting that US states with higher levels of disability prejudice institutionalize more people, even when state population size is controlled for (Friedman, 2019).

Impact of COVID-19 on Persons with Disabilities

Existing oppression and historical patterns of maltreatment and violence toward disabled people have intersected with the COVID-19 pandemic to create unique sources of stress and trauma for PWD. Early pandemic conversations around healthcare and ventilator triage aroused concerns surrounding potentially ableist rationing plans that would de-prioritize people with disabilities (Andrews et al., 2020; Lund & Ayers, 2020; Lund et al., 2020). Further, the pandemic and associated mitigation measures have complicated the ability to safely access necessary medical care, especially for those who require routine in-person healthcare visits or rely on services such as personal care attendants (Lund et al., 2020). Fear of COVID-19 transmission and mortality, both in oneself and in loved ones, is also a considerable source of stress for the disability community, especially when considering that PWD are more likely to have health conditions that place them at greater risk of contracting COVID-19 (Lund et al., 2020). However,

underlying health conditions alone are not sufficient in explaining COVID-19 risk among PWD. In fact, a recently published UK government report found that during the January 24th to November 20th period of 2020, PWD made up nearly 60% of all deaths involving COVID-19 in England, noting that “no single factor explains the considerably raised risk of death involving COVID-19 among disabled people... an important part of the raised risk is because disabled people are disproportionately exposed to a range of generally disadvantageous circumstances compared with non-disabled people” (Office for National Statistics, 2021).

Despite the potential for the COVID-19 pandemic to introduce both direct and indirect sources of both short- and long-term health risk, as well as to exacerbate existing stressors and create unique forms of trauma and stress among PWD, only a handful of studies have investigated its impacts on the mental health of this population. Among one sample of Canadian adults with disabilities and chronic health conditions, greater concerns around contracting COVID-19, increased loneliness, and decreased feelings of belonging were associated with increased anxiety, stress, and despair (Pettinicchio, Maroto, Chai, & Lukk, 2021). In another study, adults with intellectual and developmental disabilities reported increased anxiety and stress resulting from numerous pandemic-related challenges, such as more difficulty obtaining accessible and accurate COVID-19 information, having to adapt to viral mitigation efforts that conflict with certain accessibility needs (e.g., being unable to bring a support person to medical appointments), more difficulty accessing mental health care, and generally decreased ability to connect and form relationships with others due to social isolation (Lake et al., 2021).

Given the disproportionate impacts of the COVID-19 pandemic on PWD, further investigating the negative mental health impacts of pandemic-related stress and trauma exposure on PWD is sorely needed. However, it is also important to identify protective factors and sources

of resilience that buffer against risk of adverse outcomes following trauma, as well as those that promote PTG.

PTG among Persons with Disabilities

Most of the literature looking at PTG in disabled populations has examined this construct following trauma related to experiencing a chronic illness or the acquisition of disability (e.g., Goldberg, McDonald, & Perrin, 2019; Grace, Kinsella, Muldoon, & Fortune, 2015; Hefferon, Grealy, & Mutrie, 2009). However, such studies provide insight into potential factors and mechanisms driving the development of PTG among PWD. For instance, adaptive emotion regulation has been associated with higher PTG in those with chronic health conditions (Arjeini, Zeabadi, Hefzabad, & Shahsavari, 2020; Yu et al., 2014), an association that has been shown in the general PTG literature (e.g., Orejuela-Dávila et al., 2019). Social support is also a robust predictor of PTG among both members of the general population (Žukauskienė et al., 2019, Zhou et al., 2017) and people with chronic illness (Zeligman et al., 2018). More specifically, higher levels of emotional support (versus instrumental support) have been linked to higher PTG in this context (e.g., Kamen et al., 2016).

Relatively little literature has examined the relationship between disability-specific processes and PTG. One relevant disability-specific process is disability identity, or an individual's self-concept as it relates to their disability, specifically involving the affirmation of oneself as a disabled person and the subsequent incorporation of disability into self-concept (Bogart, 2014; Dunn & Burcaw, 2013). A person endorsing high levels of disability identity, for instance, might participate in various aspects of the disability community (such as joining an advocacy group) or develop a strong sense of disability pride (Forber-Pratt et al., 2017). Research investigating the role of disability identity in mental health outcomes among PWD has

generally pointed to this construct as a protective factor. One study found that disability identity predicted higher satisfaction with life among a sample of PWD (Bogart, 2014). Another investigation of individuals with multiple sclerosis found that stronger disability identity predicted lower depression and anxiety (Bogart, 2015).

There exists very little published research on disability identity and PTG, with existing studies exclusively examining PTG following the acquisition of illness or disability. Nonetheless, these investigations provide valuable insight into how disability identity may relate to the development of PTG. A study on influence of disability identity on PTG in people with acquired disability found that higher disability identity was associated with higher PTG, and that this effect was most pronounced among those reporting higher levels of resilience (Heo & Jo, 2018). Mediating effects of aspects of disability identity on PTG have also been observed, where disability acceptance mediated the impact of basic hope on PTG among a sample of individuals with traumatic paraplegia (Byra, 2019).

Present Investigation

Despite the fact that PWD face numerous sources of both direct and indirect risk related to COVID, little research attention has been paid to the psychological impacts of the pandemic on this population. Lack of public health and epidemiologic research on avoidable disparities impacting PWD in the context of the COVID-19 pandemic is particularly concerning, given the strong potential for existing sources of oppression to compound the challenges of the pandemic — and vice versa — in order to increase risk of exposure to sources of trauma and stress. Therefore, the present study is an investigation of how a variety of COVID-related exposures, pandemic-related stress, and several known psychosocial factors (emotion regulation, emotional support) along with disability-specific processes (disability identity) predict PTG among PWD.

This study extends prior research by looking at PTG in the context of existing disability, examining growth stemming not from the acquisition of illness or disability, but rather from events that may be disproportionately experienced due to broad systemic oppression toward PWD. Identifying factors that buffer risk and foster growth is particularly crucial when considering how the pandemic has affected those with existing disability.

The present study tested two primary hypotheses. First, it was hypothesized that pandemic stress alone will predict PTG. Second, it was hypothesized that this relationship will retain significance when accounting for psychosocial factors and demographic characteristics. The effects of pandemic stress on both overall PTG and across factor domains were explored. Though conceptually one would expect to see a positive relation between stress and PTG based on the literature, the proposed hypotheses and their respective statistical analyses did not assume directions of effect given that these processes have not been well studied among PWD.

Methods

Participants and Procedures

The present investigation is part of a larger online study that examines the health and psychosocial impacts of the COVID-19 pandemic on people with disabilities (PWD) in the United States. The larger survey included a number of measures that aimed to capture unique sources of risk and stress faced by PWD, in addition to those that aimed to measure known sources of resilience in the disability community. Inclusion criteria for the larger study were defined such that any U.S. resident over the age of 18 who self-identified as having a disability was qualified to participate. Purposive sampling was used to recruit participants via disability-focused social media platforms and email listserves (e.g., Disability Wisdom Discussion Group on Facebook, Society for Disability Studies listserve). Individuals reached through these

channels were provided with a direct web link to the survey, which was administered via Qualtrics.

Measures

Direct and indirect COVID-19 exposures. Direct and indirect COVID exposures were assessed using six items (i.e., “Have you been tested for COVID-19?”, “Have you had, or do you currently have, COVID-19?”, “Were you ever hospitalized due to COVID-19?”, “Have any of your family members or close friends had COVID-19?”, “Were any of your family members or close friends hospitalized due to COVID-19?”, and “Have any of your family members or close friends died from COVID-19?”). Participants responded by indicating “yes” or “no” to each item; for the item assessing COVID diagnosis, a third response option of “yes/I think so” was included in consideration of scarce testing at the start of the pandemic. The items assessing friend or family member COVID hospitalization and death were only shown to participants who responded “yes” to the item asking if any family members or close friends have had COVID. During the analysis phase, the items assessing participant COVID diagnosis and hospitalization, as well as friend or family member COVID death, were omitted from the final regression model because these exposures were not sufficiently represented in the sample and therefore not adequately powered.

Pandemic stress. Pandemic-related stress was measured by the Pandemic Stress Index (PSI; Harkness, Behar-Zusman, & Safren, 2020), a 15-item checklist that captures self-reported psychological stress attributed to the COVID pandemic. Participants were instructed to check all statements that apply; examples of items included “fear of getting COVID-19”, “worrying about friends, family, partners, etc.”, “more depression”, and “increased alcohol or other substance use.” The PSI is scored by summing the number of checked responses.

Posttraumatic growth. PTG was measured using the Posttraumatic Growth Inventory Short Form (PTGI-SF; Cann et al., 2010). The PTGI-SF ($\alpha = .89$) is a ten-item, 6-point Likert scale that ranges from 0 (“I did not experience this change as a result of the COVID-19 pandemic”) to 5 (“I experienced this change to a very great degree as a result of the COVID-19 pandemic”), and is scored as a mean; higher scores indicate greater PTG. Participants were instructed to indicate the degree to which the change reflected in each item was true in their lives as a result of the COVID-19 pandemic; items included statements such as “I have a greater appreciation for the value of my own life” and “I discovered that I'm stronger than I thought I was.” The PTGI-SF includes five subscales that capture the different domains of posttraumatic growth: Relating to Others, New Possibilities, Personal Strength, Spiritual Change, and Appreciation of Life. Each factor is represented by two items in the PTGI-SF, and is scored in a similar fashion to the overall scale (i.e., as a mean).

In addition to PSI as the primary predictor and PTGI-SF as the main outcome of this investigation, several constructs were included in this analysis based on their conceptual relevance to stress and the development of PTG among PWD. These constructs include emotion regulation, emotional support, and disability identity.

Emotion regulation. Emotion regulation was measured using the Difficulties in Emotion Regulation Scale-16 (DERS-16; Bjureburg et al., 2016). The DERS-16 ($\alpha = .92$) is a validated 16-item, five-point Likert scale that asks participants to indicate how often each item applies to them, where a response of 1 represents “almost never (0-10%)” and 5 represents “almost always (91-100%)”. Items include statements such as “I have difficulty making sense out of my feelings” and “When I am upset, I feel out of control”. The DERS-16 is scored as a sum, with higher scores indicating greater difficulty in regulating emotion.

Emotional support. Emotional support was measured by the Patient-Reported Outcomes Measurement Information System Emotional Support Short Form 4A (PROMIS-ES-SF 4A, Hahn et al., 2014). The overall PROMIS is a validated instrument that consists of a series of measures that capture various domains of social health and support, and includes the PROMIS-ES-SF 4A. This measure is a four-item, 5-point Likert scale in which participants are instructed to rate how frequently each item applies to them (ranging from 1 = “Never” to 5 = “Always”). The PROMIS-ES-SF 4A ($\alpha = .86$) is scored as a sum; higher scores on this measure indicate greater levels of emotional support.

Disability identity. Disability identity processes were measured using the Disability Identity Development Scale (DIDS; Forber-Pratt et al., 2020). This 37-item measure is a 5-point Likert scale (1 = “not like me at all” to 5 = “very much like me”) that asks participants to indicate their level of agreement across a range of questions about various aspects of disability identity. The DIDS is made up of four subscales, each scored as a sum, that represent unique factors related to disability identity: internal beliefs about own disability and the disability community, anger and frustration with disability experiences, adoption of disability community values, and contribution to the disability community. Because these factors do not represent a single unified construct, and because the dimensions of disability identity that may contribute to the development of PTG have not yet been well-characterized, only those DIDS subscales that significantly predicted PTG during the analysis phase were included in the final regression model to maintain parsimony. The only DIDS subscale that emerged as a significant predictor of PTG was the Contribution to the Disability Community subscale ($\alpha = .90$), an eleven-item subscale containing items such as “I am a mentor to other people with disabilities,” “I organize

events for the disability community (i.e., support group meetings, sporting events, advocacy events, lectures)”, and “I speak publicly about disability (in person or online).”

Disability-related and demographic covariates. Due to the high degree of heterogeneity in functioning and quality of life among disabled populations (even among those who have the same condition or diagnosis), possible effects of disability-related impairment were accounted for in the model by including three items from the World Health Organization Quality of Life Brief Form (WHOQOL-BREF; WHO, 1996). The WHOQOL-BREF is a 26-item, five-point Likert scale that assesses different domains of health and functioning. Each of the three items that were selected from this scale assesses participants’ experiences over the past seven days, though instructions and anchor point responses differ slightly by section. The items were: “To what extent do you feel that physical pain prevents you from doing what you need to do?” (1 = “Not at all” to 5 = “An extreme amount”), “Do you have enough energy for everyday life?” (1 = “Not at all” to 5 = “Completely”), and “How satisfied are you with your ability to perform your daily living activities?” (1 = “Very dissatisfied” to 5 = “Very satisfied”). These items were each entered individually into the model during analyses.

In addition to disability-related functioning and quality of life, a number of demographic characteristics were included in the primary model. The following demographic covariates were selected for inclusion and (re)coded as indicated: gender (coded as three indicator variables: cisgender female, transgender/gender nonconforming, and cisgender male [reference category]), Hispanic/Latinx ethnicity (dichotomously coded as 0 = “no” and 1 = “yes”), race (dichotomously coded as 0 = “White” and 1 = “non-White”), household composition (dichotomously coded as 0 = “living with others” and 1 = “living alone”), and assistance receipt (i.e., vocational rehabilitation, SSI, SSDI, or Social Security Retirement; dichotomously coded as 0 = “receives

assistance” and 1 = “does not receive assistance”). Gender and race were collapsed because several categories in both of these factors were not sufficiently powered for inclusion in analysis.

Analysis

Preliminary analyses were performed prior to conducting the primary hierarchical regression analysis. Basic correlation and simple regression analyses were carried out to first assess the linear relationship between PSI and PTGI-SF scores. Bivariate correlations were then conducted in order to identify covariates for initial inclusion in the regression model, wherein demographic variables that were significantly correlated ($p < .05$) with either PSI or PTGI-SF scores were selected for inclusion in the initial regression analysis. In addition to these selected variables, constructs that are conceptually related to stress and the development of PTG among PWD were chosen for inclusion as predictors (DERS-16, PROMIS Emotional Support Short Form 4A, and the DIDS Contribution to the Disability Community Subscale).

Once preliminary analyses had been performed and a finalized set of covariates were selected for analysis, hierarchical regression was conducted to assess the relationship between PSI and PTGI-SF scores while controlling for selected variables. Explanatory variables were entered into the model in a series of steps, with each step consisting of either a single variable or a block that contained multiple variables. Finally, a series of secondary analyses were performed; using the final model obtained through hierarchical regression analysis, the impact of PSI and other covariates in the model was assessed for each PTGI-SF subscale as a series of non-hierarchical multiple regression analyses.

Results

Participants

The final sample consisted of 468 participants who completed the survey and passed quality control measures. Tables A1, A2, and A3 (Appendix A, p. 26-29) display participant demographic characteristics, disability-related characteristics, and service use and receipt respectively.

Demographic Characteristics. Overall, this sample comprised a diverse set of participants. The majority of the sample consisted of cisgender women and cisgender men. Notably, 7.3% of individuals identified their gender as genderqueer, gender variant, or gender-nonconforming; transgender men and transgender women further comprised 1.1% and 0.4% of the sample respectively. Several participants in the sample identified their gender as “other” (1.1%); individuals who selected this option were prompted to type their gender identity as a string response (upon qualitative inspection, these participants’ responses either explicitly used the words “transgender” or “non-binary,” or were conceptually related to transgender or non-binary identities). The majority of the sample (70.1%) reported their race as White. Most racial categories were well-represented within the sample; however, Asian participants (1.5% of the sample) were underrepresented compared to the general US population. About 20 percent (20.3%) of the sample identified their ethnicity as Hispanic or Latinx. A full breakdown of demographic frequencies and percentages, including those for employment status and household composition, can be seen in Table A1 (Appendix A, p. 26).

Disability-Related Characteristics and Service Use. Participants were highly heterogenous with respect to self-reported type of disability, as well as with respect to type of functional difficulties. Many individuals in the sample (43.2%) reported having multiple

disabilities, and a noteworthy number of participants (41.0%) also reported working in a disability-related field. Sample frequencies and percentages for disability type, having multiple disabilities or not, functional difficulties, and working in a disability-related field can be seen in Table A2 (Appendix A, p. 27). In addition, service use and receipt were common among the sample (Table A3, Appendix A, p. 28).

Direct and Indirect COVID-Related Exposures. The majority of the sample (70.1%) reported having been tested for COVID-19. In response to the item regarding COVID-19 diagnosis, a number of participants responded either “yes” (2.4%) or “probably/I think so” (4.9%), although most reported that they have never had and presently do not have COVID-19 (92.7%). A small portion of the sample (1.7%) reported having been hospitalized due to COVID-19. About one quarter of the sample (25.9%) reported knowing a family member or close friend who had been diagnosed with COVID-19, with 13% reporting family member or close friend hospitalization due to COVID-19, and 6.6% reporting death of a family member or close friend due to COVID-19. All exposure frequencies and prevalence percentages are shown in Table A4 (Appendix A, p. 29).

Preliminary Analyses

PSI score ($M = 3.66$, $SD = 1.80$) and PTGI-SF score ($M = 2.01$, $SD = 1.07$) were found to share a statistically significant, negative correlation ($r = -.302$, $p < .001$). PSI was further confirmed as a significant predictor of PTGI-SF score through simple linear regression, where higher PSI score predicted lower PTGI-SF score, $F(1,465) = 46.63$, $\beta = -.302$, $p < .001$. After the linear relationship between PSI and PTGI-SF was established, selected demographic characteristics, three items from the WHOQOL-BREF (used as indices of functioning and quality of life), and measures of additional constructs (DERS-16, PROMIS-ES-SF 4A, and the

DIDS Contribution to the Disability Community Subscale) were correlated with direct and indirect COVID exposures, PSI score, and/or PTGI-SF score. Bivariate correlation coefficients for these variables as well as direct and indirect COVID exposures, PSI score, and/or PTGI-SF score are shown in Table B1 (Appendix B, p. 30). Given that many of these factors shared associations with pandemic stress and PTG (i.e., PSI and PTGI-SF) as well as with COVID-related exposures, their inclusion in the primary analysis was justified in order to account for potential confounding effects on the relationship between PSI and PTGI-SF, as well as to observe the main effects of these factors on PTG.

Lastly, there were no statistically significant interaction effects between PSI and any of the additional measures (i.e., DERS-16, PROMIS Emotional Support Short Form 4A, & DIDS Contribution to the Disability Community) on PTGI-SF score. Because no moderation effects were observed in an initial iteration of the final primary regression analysis, all interaction terms were excluded from the final model.

Primary Analysis

Based on results obtained through preliminary analyses, a six-step hierarchical multiple regression was conducted, entering PTGI-SF mean score as the dependent variable. Table C1 (Appendix C, p. 31) shows regression coefficients for all predictors and R^2 change at each step. The overall model at step 1 was significantly predictive of PTGI-SF scores, $F(9,455) = 22.49$, $R^2 = .29$, $p < .001$. With the exception of race ($\beta = .036$, $p = .38$), all predictors introduced in this step were statistically significant ($p < .05$) with varying directions of effect. Higher scores on all three of the WHOQOL-BREF items, being cisgender male, and Hispanic/Latinx ethnicity significantly predicted higher PTGI-SF score, whereas lack of assistance receipt, being cisgender female, transgender, or nonbinary, and living alone significantly predicted lower PTGI-SF score.

At step 2, direct and indirect COVID-19 exposures (i.e., having been tested for COVID-19, having a family member or close friend who has been diagnosed with COVID-19, and having a family member or friend who has been hospitalized with COVID-19) were added to the regression model. All variables added at this step significantly contributed to the model ($p < .05$) and resulted in a significant change in R^2 , $F(3,452) = 5.54$, $\Delta R^2 = .025$, $p = .001$.

PSI score was added at step 3; however, it did not significantly contribute to the model ($\beta = .036$, $p = .57$), nor did it result in a significant change in R^2 , $F(1,451) = .316$, $\Delta R^2 < .001$, $p = .574$. DERS-16 was introduced into the model at step 4, but was not a significant predictor of PTGI-SF scores ($\beta = .016$, $p = .706$) and did not result in a significant change in ΔR^2 , $F(1,450) = .143$, $\Delta R^2 < .001$, $p = .706$. At step 5, PROMIS-ES-SF scores were added to the model as a predictor, though it was not a statistically significant model term ($\beta = .020$, $p = .657$); no significant change in R^2 was observed at this step, $F(1,449) = .197$, $\Delta R^2 < .001$, $p = .657$. Lastly, DIDS Contribution to the Disability Community subscale score was added at step 6, and was found to be a statistically significant predictor of PTGI-SF scores ($\beta = .197$, $p < .001$). The introduction of this DIDS subscale to the model resulted in a significant R^2 change, $F(1,448) = 22.17$, $\Delta R^2 = .031$, $p < .001$. In the final model ($F(16,448) = 16.085$, $R^2 = .342$, $p < .001$), higher scores on two of the WHOQOL-BREF items (“Do you have enough energy for everyday life?” and “How satisfied are you with your ability to perform your daily living activities?”), being cisgender male, Hispanic/Latinx ethnicity, having been tested for COVID-19, having a family member or close friend who has been hospitalized with COVID-19, and higher scores on the DIDS Contribution to the Disability Community subscale were significantly predictive of higher PTG ($p < .05$). Final model terms that significantly predicted lower PTG ($p < .05$) were lack of assistance receipt, being cisgender female, transgender, or nonbinary (where the reference

category for gender was cisgender male), living alone, and having a family member or close friend who has been diagnosed with COVID-19.

Secondary Analyses

Tables D1 and D2 (Appendix D, p. 32 & 33) show model summary statistics and regression coefficients respectively for each subscale analysis. In the secondary regression analyses, patterns of significance were generally consistent across all subscales, with a few noteworthy exceptions. The WHOQOL-BREF items differed in significance across subscales, primarily predicting change in the Relating to Others and Spiritual Change subscales ($p < .05$). Most notably, however, PSI emerged as a statistically significant predictor of four of the five PTGI-SF subscales ($p < .05$), where directions of effect differed by subscale. Higher PSI score significantly predicted lower scores in the Relating to Others, New Possibilities, and Spiritual Change subscales, and predicted higher Appreciation of Life subscale score. PSI was also a positive predictor of higher scores on the Personal Strength subscale, though to a less significant degree ($p < .10$). One measure — the DIDS Contribution to the Disability Community subscale — consistently exerted significant positive effects across all PTGI-SF subscales ($p < .05$).

Discussion

Main Findings

Preliminary analyses revealed that pandemic stress significantly predicted PTG, in support of the first primary study hypothesis. However, the main effect of PSI score on PTGI-SF score occurred in the opposite direction than was expected, such that lower reported pandemic stress was associated with greater PTG. Given the chronic and ongoing nature of the COVID-19 pandemic as a source of stress and trauma, this finding may reflect the timing of data collection along the developmental trajectory of PTG. In other words, those reporting higher levels of

pandemic stress may have more difficulty deriving benefit from their experiences because they simply have not had the time or opportunity yet to sufficiently process these experiences in a way that leads toward growth. Nonetheless, because PTG is not well-documented among those with existing disability, it is unclear at this point what might be the exact explanation for this effect, particularly given that patterns and directions of growth have varied depending on context and study population in the general PTG literature (e.g., Zhou et al., 2020a; Tsai et al., 2016). However, COVID-19 pandemic-specific investigations of PTG have generally noted that pandemic-related exposures and stress share a direct relation with PTG (e.g., Chen et al., 2020; Zhou et al., 2020b). Given that the present investigation contrasts these findings with respect to pandemic-related stress specifically, it may also be the case that the unique population characteristics and experiences of PWD in general modify the impacts of stress on this population compared to non-disabled people, although this cannot be determined based on the present sample alone due to lack of a comparison group.

Although lower pandemic stress was associated with greater PTG in the preliminary analyses, there was no main effect of PSI score on PTGI-SF score in the primary hierarchical regression model. Rather, a number of other factors were better able to predict PTGI-SF score. Higher reported level of functioning and disability-related quality of life, as well as assistance receipt, were generally protective and predicted higher PTG. While health-related quality of life and functioning have been positively linked to PTG in the literature, these constructs tend to be investigated as outcomes of PTG (e.g., Liu, Doege, Thong, & Arndt, 2020) rather than as indices of disability. In the context of the current pandemic, PWD with poorer overall functioning have probably encountered additional barriers that further complicate daily living activities and compound the stresses of COVID-19. Assistance receipt (i.e., vocational rehabilitation, SSI,

SSDI, or Social Security Retirement) likely represents an additional buffer against stress and its negative effects, where assistance programs such as SSI or SSDI for instance may alleviate or mitigate the effects of pandemic stress. Further, direct and indirect COVID-19 exposures such as being tested for COVID-19 and knowing a close friend or family member who has been hospitalized with COVID-19 predicted greater PTG, whereas knowing a friend or family member who has received a COVID-19 diagnosis predicted lower PTGI-SF score. Chi and colleagues' (2020) study similarly reported that knowing someone who had been isolated due to COVID-19 predicted lower PTG, an observation that potentially reflects the stress and uncertainty that comes with a loved one experiencing illness. It is likely that COVID-19 testing and friend/family COVID-19 hospitalization predict higher PTG for conceptually similar reasons, where these exposures confer some kind of protective effect or provide the ability to process stress in a way that leads toward growth.

As far as the psychosocial measures that were selected as predictors of PTG, most did not exert any significant main effects on PTGI-SF score, with the sole exception being the DIDS Contribution to the Disability Community Subscale. This measure captures a relational and behavioral aspect of self-concept that is unique from both trait characteristics such as emotion regulation and from external sources of support that may not in themselves be related to identity (e.g., emotional support). Rather, engaging in disability community involvement is a multidimensional process that likely confers multiple avenues or mechanisms of growth. More plainly, contributing to the disability community involves a wide range of activities that allow repeated opportunities for self-reflection, interpersonal connection, and growth.

Unexpectedly, in the secondary analyses, PSI scores emerged as a significant predictor for most of the PTGI-SF subscales when adjusting for the same covariates as in the primary

analysis. However, directions of effect differed depending on subscale, potentially explaining the nonsignificant effect of PSI score on overall PTGI-SF score. Higher pandemic stress was associated with higher scores in both the Personal Strength and Appreciation of Life subscales, and with lower scores in the Relating to Others, New Possibilities, and Spiritual Change subscales. It is possible that pandemic-related stress fosters growth in some domains but hinders growth in others, even when other factors are accounted for. This finding may also be a reflection of timing, where greater levels of growth in each factor might emerge at different time points. It is again unclear, however, what exactly may be driving subscale differences. Caution should also be made when generally interpreting these secondary analyses given the small number of items in each PTGI-SF subscale.

Demographic-Related Findings

The sample in the present study exhibited a high degree of heterogeneity in terms of disability characteristics, with a wide range of disability types and difficulties in functioning represented among participants, and over one-third of participants reporting multiple disabilities. In addition to representing a broad range of disability experience, the gender breakdown of this sample is striking, in particular the gender-nonconforming (GNC) and non-binary participants who comprised nearly 8% of all survey respondents. This observation is notable given emerging research documenting increased disability and chronic disease risk among transgender and gender-nonconforming (TGNC) populations (e.g., Downing & Przedworski, 2018; Dragon et al., 2017). Specifically, a handful of studies suggest heightened disease and disability burden among GNC people in particular (Cicero et al., 2020; Downing & Przedworski, 2018).

It is noteworthy that a number of demographic characteristics were significant predictors of PTG in the primary analysis. Gender yielded a significant influence on PTG, where cisgender

men reported higher PTG compared to both cisgender female and transgender & nonbinary participants. In addition, being Hispanic/Latinx was generally protective with regard to PTG. Similarly, although race was not a significant predictor of PTG in the primary or secondary regression models, non-White participants were more likely to report both lower pandemic stress and PTG. However, it is difficult to determine from the present study whether these findings are reflections of differences in levels of exposure, differences in subsequent stress- and growth-related processes, or differences in factors that affect those processes among PWD. It may also be the case that the pandemic exposure questions and PSI do not capture the full breadth of experience of PWD who are members of other marginalized groups.

Although Asian PWD were underrepresented in the current sample, racial categories were otherwise well-represented, with American Indian/Alaska Native (AI/AN) and multiracial individuals being more highly represented compared to US population estimates. It is uncertain how well these sample characteristics actually represent the true population diversity of PWD given the purposive sampling procedure that was used. Even so, racial and ethnic health inequities (including those related to disability) have been well-documented in the public health literature, and it is generally understood that people of color — particularly Black, Hispanic or Latinx, and indigenous populations — disproportionately experience chronic illness and disability due to a broad number of factors including racism and systematic oppression (e.g., Churchwell et al., 2020; Bailey et al., 2017). Given that people of color are more likely to experience disability, the diversity of the current sample is nonetheless an important feature of the present study in terms of representing a variety of experiences, especially in the context of the disproportionate impact that the COVID-19 pandemic has had on people of color in the United States.

Limitations and Future Directions

The present study has a number of overall limitations. First, it is difficult to determine based on these findings how pandemic-related PTG in PWD might directly compare to that of nondisabled people, given that this investigation did not contain a nondisabled comparison group. Future research assessing the effects of the COVID-19 pandemic on trauma- and stress-related outcomes in PWD might wish to recruit nondisabled participants. In addition, generalizability of the present study may be limited due to the non-representative nature of the sample. Probability-based sampling methods should be considered in future studies of PTG, particularly in the context of COVID-related exposures and subsequent outcomes.

Third, although the secondary analyses suggest that pandemic-related stress may possibly exert mixed directions of effect across different domains of PTG, the findings presented in the current study with respect to PTGI-SF subscales should again be interpreted with caution. Rather, the specific effects of pandemic stress on PTG requires more comprehensive investigation. Future studies should utilize the full PTGI measure in order to assess effects across factor domains. Lastly, given the cross-sectional nature of these data, it is also difficult to determine the temporal or causal relationship between these factors. Future investigations should therefore consider a longitudinal approach to studying how the COVID-19 pandemic has impacted PWD with respect to stress and PTG.

Conclusion

PWD, who already contend with existing oppression that contributes to trauma exposure and stress, have been disproportionately impacted by the COVID-19 pandemic, creating an exceptional level of psychological burden. The present investigation provides new insight into the sources of both stress and resilience that shape how PWD have experienced the pandemic, in

particular the potential beneficial impact of disability community involvement. However, the somewhat exploratory nature of this study highlights the dire need for further investigation of both the negative and positive psychological impacts of pandemic-related stress and trauma in PWD. While the exact nature of the mechanisms that shape pandemic-related PTG among PWD have yet to be fully characterized, one takeaway of the present investigation is the potential impact of actively engaging with the disability community as a source of resilience and growth in PWD. Amidst the pandemic, throughout which many PWD have felt ignored or dehumanized, the disability community may offer reprieve in the broader pursuit of better health, wellbeing, and justice for PWD.

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Appendix A: Demographic Characteristics

Table A1

Participant demographic characteristics.

	<i>n</i>	%
Gender		
Cisgender male	188	40.2
Cisgender female	234	50.0
Transgender female	2	0.4
Transgender male	5	1.1
Gender queer, gender variant, or gender-nonconforming	34	7.3
Other	5	1.1
Race		
American Indian or Alaska Native	32	6.8
Asian	7	1.5
Black	59	12.6
Native Hawaiian or Pacific Islander	6	1.3
White	328	70.1
Other	6	1.3
Multiracial	29	6.2
Ethnicity		
Hispanic	95	20.3
Non-Hispanic	373	79.7
Employment Status		
Full-time (40 hours per week)	167	35.7
Part-time (less than 40 hours per week)	182	38.9
Permanent or temporarily disabled and NOT working	56	12.0
Permanent or temporarily disabled BUT working "off the books" (or "under the table")	9	1.9
Unemployed (Student)	18	3.8
Unemployed (Other)	36	7.7
Household Composition		
I live with my roommates	71	15.2
I live with my romantic partner and/or children	187	40.0
I live with my parents or other relatives	82	17.5
I live by myself	100	21.4
Other	7	1.5
Multiple choices selected	21	4.5

Table A2*Disability-related characteristics of participants.*

	<i>n</i>	%
Disability type		
Emotional Behavioral Disorder (e.g., anxiety, schizophrenia, eating disorder, bipolar)	145	31.0
Other Health Impairment (e.g., diabetes, asthma, ADD/ADHD, epilepsy)	121	25.9
Physical Disability (e.g., cerebral palsy, amputation, spina bifida)	233	49.8
Hearing Loss or Deafness	74	15.8
Vision Loss or Blindness	56	12.0
Learning Disability	57	12.2
Intellectual Disability	18	3.8
Autism	42	9.0
Speech or Language Disability	18	3.8
Other	43	9.2
Multiple disabilities		
Yes	202	43.2
No	266	56.8
Functional difficulties		
Walking or running	259	55.3
Clutching or writing	93	19.9
Speaking	56	12.0
Hearing	88	18.8
Seeing	88	18.8
Smelling	26	5.6
Thinking or remembering	146	31.2
Feeling or expressing	111	23.7
Reading or processing information	95	20.3
Experiencing stimulus	104	22.2
Being in crowds	109	23.3
Other	31	6.6
None of the above	2	0.4
Work in disability-related industry (e.g., rehabilitation, special education, independent living center, etc.)		
Yes	192	41.0
No	275	58.8

Table A3*Service use and receipt among study participants.*

	<i>n</i>	%
"I employ the service of..."		
Personal care attendant	68	14.5
Direct support professional	66	14.1
An agency to support my living and personal needs	36	7.7
I do not employ any of these services	243	51.9
I employ multiple of these services	55	11.8
"I receive or use the following services..."		
Vocational rehabilitation	40	8.5
Supplemental security income (SSI)	42	9.0
Social security disability insurance (SSDI)	126	26.9
Social security retirement	12	2.6
I do not receive or use any of these services	153	32.7
I receive or use multiple of these services	94	20.1

Table A4*Direct and indirect COVID-related exposures among participants.*

	<i>n</i>	%
"Have you been tested for COVID-19?"		
Yes	328	70.1
No	140	29.9
"Have you had, or do you currently have, COVID-19?"		
Yes	11	2.4
Probably/I think so	23	4.9
No	434	92.7
"Were you ever hospitalized due to COVID-19?"		
Yes	8	1.7
No	460	98.3
"Have any of your family members or close friends been diagnosed with COVID-19?"		
Yes	121	25.9
No	347	74.1
"Were any of your family members or close friends hospitalized due to COVID-19?"		
Yes	61	13.0
No	407	87.0
"Have any of your family members or close friends died from COVID-19?"		
Yes	31	6.6
No	437	93.4

Appendix B: Preliminary Analyses

Table B1

Matrix displaying Pearson correlation coefficients for variables that were selected for analysis.

	Have been tested for COVID-19	Family or friend has/had COVID-19	Family or friend has been hospitalized with COVID-19	PSI	PTGI-SF
Have been tested for COVID-19	—	-0.01	0.02	-0.15**	0.24**
Family or friend has/had COVID-19	-0.01	—	0.66**	0.20**	-0.15**
Family or friend has been hospitalized with COVID-19	0.02	0.66**	—	0.06	0.01
PSI	-0.15**	0.20**	0.06	—	-0.30**
PTGI-SF	0.24**	-0.15**	0.01	-0.30**	—
DERS-16	0.13**	-0.07	-0.03	-0.02	0.06
PROMIs Emotional Support SF	-0.04	0.15**	0.07	0.19**	-0.01
DIDS (Contribution to the Disability Community Subscale)	-0.01	0.04	-0.02	0.06	0.24**
“To what extent do you feel that physical pain prevents you from doing what you need to do?”	0.11*	-0.01	0.00	0.01	0.04
“Do you have enough energy for everyday life?”	0.03	0.00	-0.01	-0.09*	0.25**
“How satisfied are you with your ability to perform your daily living activities?”	0.10*	-0.02	-0.03	-0.19**	0.29**
Does not receive assistance (Vocational rehabilitation, SSI, SSDI, or Social Security Retirement)	-0.17**	0.18**	0.04	0.45**	-0.38**
Gender (Cisgender male)	0.16**	-0.18**	-0.05	-0.37**	0.38**
Gender (Cisgender female)	-0.08	0.13**	0.07	0.16**	-0.24**
Gender (Transgender and non-binary)	-0.11*	0.07	-0.04	0.33**	-0.22**
Hispanic/Latinx	0.14**	-0.03	-0.01	-0.20**	0.22**
Race	0.05	0.05	0.12**	-0.15**	0.15**
Living alone	-0.01	0.01	-0.10*	0.13**	-0.21**

* $p < .05$; ** $p < .01$

Appendix C: Primary Analysis

Table C1

Hierarchical regression results displaying standardized beta coefficients, as well as initial R^2 and ΔR^2 values at each step.

Predictors	Step 1		Step 2		Step 3		Step 4		Step 5		Step 6	
	β	R^2	β	ΔR^2								
“To what extent do you feel that physical pain prevents you from doing what you need to do?”	0.09*		0.07		0.07		0.07		0.07		0.04	
“Do you have enough energy for everyday life?”	0.14*		0.14*		0.14*		0.15*		0.14*		0.12*	
“How satisfied are you with your ability to perform your daily living activities?”	0.15**		0.14*		0.14*		0.14*		0.14*		0.10*	
Does not receive assistance (Vocational rehabilitation, SSI, SSDI, or Social Security Retirement)	-0.20**		-0.18**		-0.17**		-0.17**		-0.17**		-0.16**	
Gender (Cisgender male) ^a	0.20**		0.18**		0.18**		0.17**		0.18**		0.18**	
Gender (Cisgender female)	-0.20**		-0.18**		-0.18**		-0.18**		-0.18**		-0.18**	
Gender (Transgender and non-binary)	-0.18**		-0.15*		-0.14*		-0.14*		-0.14*		-0.15*	
Hispanic/Latinx	0.14**		0.13*		0.13*		0.12*		0.13*		0.12*	
Race ^b	0.04		0.04		0.04		0.03		0.04		0.04	
Living alone	-0.12*	0.31	-0.11*		-0.11*		-0.11*		-0.11*		-0.10*	
Have been tested for COVID-19			0.12*		0.12*		0.12*		0.12*		0.12*	
Family or friend has/had COVID-19			-0.15*		-0.14*		-0.14*		-0.14*		-0.15*	
Family or friend has been hospitalized with COVID-19			0.11*	0.03	0.11*		0.11*		0.11*		0.12*	
PSI					-0.03	0.00	-0.03		-0.03		-0.05	
DERS-16							0.02	0.000	0.02		0.03	
PROMIs Emotional Support SF									0.02	0.00	-0.02	
DIDS (Contribution to the Disability Community Subscale)											0.20**	0.03

^a *Cisgender male was the reference category for gender in all regression analyses; theoretical coefficients for cisgender male were calculated using cisgender female as the reference category*

^b *Dichotomously coded (0 = White, 1 = non-White)*

^c ** $p < .05$; ** $p < .001$*

Appendix D: Secondary Analyses

Table D1

Shown below are summary regression statistics for each subscale analysis.

PTGI-SF Subscale	$M_{subscale}$	$SD_{subscale}$	R	Adj. R^2	F	$df1$	$df2$	p
Relating to Others	2.045	1.328	0.558	0.287	12.658	16	447	< .001
New Possibilities	1.921	1.351	0.571	0.302	13.577	16	448	< .001
Personal Strength	2.046	1.386	0.469	0.192	7.898	16	448	< .001
Spiritual Change	1.668	1.446	0.640	0.389	19.460	16	448	< .001
Appreciation of Life	2.353	1.170	0.359	0.098	4.140	16	448	< .001

Table D2

Standardized regression coefficients for all predictors in each subscale analysis.

Predictors	Relating to Others	New Possibilities	Personal Strength	Spiritual Change	Appreciation of Life
“To what extent do you feel that physical pain prevents you from doing what you need to do?”	-0.06	0.02	0.03	0.10*	0.07
“Do you have enough energy for everyday life?”	0.16*	0.09	0.09	0.06	0.08
“How satisfied are you with your ability to perform your daily living activities?”	0.01	0.07	0.09	0.14*	0.07
Does not receive assistance (Vocational rehabilitation, SSI, SSDI, or Social Security Retirement)	-0.19**	-0.15*	-0.10*	-0.18**	-0.01
<i>Gender (Cisgender male)^a</i>	<i>0.11*</i>	<i>0.16**</i>	<i>0.15*</i>	<i>0.17**</i>	<i>0.10*</i>
Gender (Cisgender female)	-0.12*	-0.16**	-0.16*	-0.17**	-0.11*
Gender (Transgender and non-binary)	-0.08	-0.05	-0.14*	-0.17**	-0.13*
Hispanic/Latinx	0.11*	0.15*	0.13*	0.10*	-0.02
Race ^b	0.03	0.03	0.04	0.05	0.00
Living alone	-0.10*	-0.13*	-0.07	-0.06	-0.06
Have been tested for COVID-19	0.11*	0.11*	0.15*	0.10*	0.02
Family or friend has/had COVID-19	-0.05	-0.10	-0.15*	-0.08	-0.20*
Family or friend has been hospitalized with COVID-19	0.08	0.04	0.13*	0.05	0.17*
PSI	-0.11*	-0.11*	0.10	-0.16**	0.11*
DERS-16	0.03	0.02	0.02	0.02	0.05
PROMIs Emotional Support SF	-0.00	-0.03	0.04	-0.13*	0.04
DIDS (Contribution to the Disability Community Subscale)	0.19**	0.20**	0.14*	0.10*	0.17**

^a *Cisgender male was the reference category for gender in all regression analyses; theoretical coefficients for cisgender male were calculated using cisgender female as the reference category*

^b *Dichotomously coded (0 = White, 1 = non-White)*

^c **p < .05; **p < .001*