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Minority Stress, Pandemic Stress, and Mental Health Among Gender Diverse Young Adults: Gender Dysphoria and Emotion Dysregulation as Mediators

M Pease, Thomas P. Le, and Derek K. Iwamoto

Department of Psychology, University of Maryland


Gender diverse people in the United States are uniquely vulnerable to deleterious health outcomes because of long-enshrined systems of oppression and marginalization in American society. Trans young adults are especially vulnerable to these deleterious outcomes owing to their unique position in the life course. However, more research is needed on the mechanisms through which this marginalization contributes to mental health disparities in trans populations. Using a minority stress framework and online cross-sectional survey design, the current study examines potential mediators of the relationship between transgender identity-related distal stress and psychological distress from late May to early July 2020 in a sample of transgender young adults ($N = 239$; ages 18–29). More than half the sample scored above the K6 cutoff for severe psychological distress. Distal stress had a significant direct ($\beta = .17$, $SE = .04$, $t = 2.76$, $p = .006$) and indirect effect on psychological distress. Distal stress was indirectly associated with psychological distress through gender dysphoria ($\beta = .04$; 95% CI [.001, .10]) and emotion dysregulation ($\beta = .16$; 95% CI [.09, .23]). COVID-19 pandemic stressors were also positively associated with psychological distress ($\beta = .36$, $SE = .12$, $t = 5.95$, $p < .001$). Results highlight the significant mental health burden facing the trans community especially in the COVID-19 context, support a conceptualization of gender dysphoria as connected to experiences of oppression, and affirm the relevance of emotion dysregulation within minority stress frameworks. Mental health resources cognizant of the specific challenges experienced by trans young adults as well as policy changes that seek to address underlying structural transphobia in American culture and institutions are urgently needed.

Public Significance Statement

This study surveying young adults with minority gender identities found (a) high rates of psychological distress during COVID-19, (b) that pandemic stress was associated with greater psychological distress, and (c) transphobic discrimination was associated with greater gender dysphoria and emotion dysregulation, which were both associated with greater psychological distress. This highlights the mechanisms underlying trans health disparities and the importance of recognizing transphobic/cisnormative experiences and systems of oppression when conducting research, creating policies, and/or providing services to support the transgender community.

Keywords: discrimination, mental health, minority stress, transgender, transphobia

M Pease  <https://orcid.org/0000-0003-2419-712X>

Thomas P. Le  <https://orcid.org/0000-0002-6685-2236>

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This article is dedicated to the memory of Jude Maloney.

Correspondence concerning this article should be addressed to M Pease, Department of Psychology, University of Maryland, 4094 Campus Drive, Biology-Psychology Building Room 3128, College Park, MD 20742, United States. Email: mpease1@terpmail.umd.edu

Transgender people¹ exist as a marginalized group in the United States. This status is reflective of cisnormative values (i.e., the belief that biological sex and gender identity must always be

¹This article uses several terms to describe people whose gender identity does not align with their sex assigned at birth, including identities outside of the gender binary (e.g., nonbinary, agender, genderqueer). It is important to acknowledge that this population is incredibly diverse and that not all people with minoritized gender identities identify as “trans/transgender”; however, such terms have been included in this study (and in past research; e.g., James et al., 2016, p. 40) because the inclusion criteria for participants was intentionally broad and inclusive. In attempt to incorporate both the nuance of identity-related language, accurately discuss findings of cited studies, and report findings of the current study in ways true to participant diversity, this article interchangeably uses the following terms to cover people for whom transphobia is an axis of oppression: “transgender,” “trans,” “gender diverse,” “gender minority,” “gender minoritized,” and “people with minoritized gender identities.”

aligned) in America. These ideas are themselves derived from white settler-colonial belief systems, such that rigid binary notions of gender were introduced by European settlers and colonists and erased more expansive indigenous conceptualizations of gender (Dozono, 2017; Morgensen, 2012; Stryker & Currah, 2014). Trans people experience disproportionately negative life outcomes compared with their cisgender counterparts owing to such long-enshrined structural and institutionalized forms of oppression in the United States (Carpenter et al., 2020; James et al., 2016). These disparities extend to negative mental health outcomes, with a national survey finding that 40% of transgender individuals report experiencing significant psychological distress, 40% report experiencing a suicide attempt in their lifetime, and 7% report experiencing a suicide attempt in the past year (James et al., 2016). A more recent survey of trans youth (ages 13–24) found that 52% had considered and 20% had attempted suicide, 77% had symptoms of generalized anxiety disorder, and 70% had symptoms of major depressive disorder (The Trevor Project, 2021). With at least one million people identifying as trans in the United States (Flores et al., 2016; Stroumsa, 2014), and with younger members of the transgender community particularly at-risk for negative mental health outcomes given their more vulnerable stage in the life course (Newcomb et al., 2020), research on the mental health of this population is imperative. Yet, there is still work to be done to understand the underlying mechanisms facilitating these vulnerabilities.

Despite some increases in visibility in recent years, transgender folx continue to experience considerable levels of discrimination across a variety of social situations and environments (James et al., 2016), including in health care settings (Grant et al., 2011), on university campuses (Flint et al., 2019; Seelman, 2016), and in the workplace (Davidson, 2016; Martinez et al., 2017). Such discriminatory experiences encompass institutions and policies that create barriers for trans folx as well as interpersonal manifestations of transgender social stigma, including exclusion, harassment, and violence (James et al., 2016). Transgender people, especially trans people of color due to intersectional race-based oppression (Lefevor et al., 2019), are especially vulnerable to hate-based violence, including homicide (Waters et al., 2018). Social scientists have defined these external experiences of antitransgender social stigma as “distal stressors” (Hendricks & Testa, 2012). Transgender young adults may be at particular risk given their unique social and fiscal vulnerabilities (e.g., financial dependency, nonaffirming family members, challenges accessing support systems virtually; Fish et al., 2020; Salerno, Devadas, et al., 2020). Given the barriers, prejudice, and discrimination gender diverse young adults may face during this critical developmental period (e.g., housing and workplace discrimination), identity-related challenges may disrupt many milestone experiences that set the foundation for further personal and professional development (Newcomb et al., 2020). Although minority stress experiences impact trans people across the life course, the current study focused on trans young adults given the significance of understanding their experiences of stigmatization and mental health during these critical years.

Together, these past findings underscore the necessity of examining antitransgender distal stressors and how they affect transgender individuals. The COVID-19 pandemic has disproportionately impacted the physical and mental health of marginalized groups, including transgender individuals (Herman & O’Neill, 2020;

Salerno, Devadas, et al., 2020; Wang et al., 2020), further emphasizing the importance and urgency of pursuing these research inquiries.

Trans Minority Stress Theoretical Frameworks

Psychological research on minority stress theory holds that experiences of discrimination create unique stressors for stigmatized identity groups (Brooks, 1981; Meyer, 2003). This theory of minority stress indicates that the social status of holding a stigmatized identity leads to experiences of discrimination which contribute to psychopathology. Although originally designed for lesbian, gay, and bisexual (LGB) individuals, studies have since found support for this model’s application extension to the transgender community with the Gender Minority Stress and Resilience model (GMSR; Hendricks & Testa, 2012; Testa et al., 2015). Indeed, transphobic discrimination has been associated with negative health outcomes for trans folx (Brennan et al., 2017; Chodzen et al., 2019; Lombardi, 2009; Tabaac et al., 2018; Timmins et al., 2017). However, further research is necessary to investigate how distal stressors impact psychological processes such as gender dysphoria and emotion dysregulation which then may manifest in psychological distress for trans people.

Hatzenbuehler (2009) articulated an approach to investigating such mechanisms through his psychological mediation framework. Specifically, he expanded on Brooks’ (1981) and Meyer’s (2003) work on minority stigma-stress by suggesting discriminatory events incite changes in underlying psychological processes to thereby create disparate mental health outcomes in sexual minority populations. Where minority stress theory suggests that stigmatized social status leads to discriminatory events which, in turn, lead to psychopathology, the psychological mediation framework acknowledges the role of other emotional and cognitive processes that may facilitate the relationship between discrimination and psychopathology. Researchers have applied this model to examine other marginalized groups (e.g., women, racial minorities; Le et al., 2020), yet few have explored the framework’s applications to gender minority populations (Lloyd et al., 2019; Scandurra et al., 2018), leaving a notable gap in our understanding of the most relevant psychological processes for transgender mental health disparities.

Gender Dysphoria

Gender dysphoria is defined as emotional distress due to discrepancies between assigned sex and gender identity (Schneider et al., 2016). Gender dysphoria is a notable stressor for transgender folx (Austin et al., 2021; Galupo et al., 2019; Schneider et al., 2016), with links to suicidality, non-suicidal self-injury, and body dissatisfaction (Peterson et al., 2017). This experience is particularly relevant for trans people, as few other identity groups must reconstruct their sense of self and, over time, internally manage misalignment between their assigned and true identities. Despite this relevance, limited work has investigated gender dysphoria and its relationship with external stigma-related stressors. Therefore, the current study seeks to investigate how antitransgender distal stress impacts symptoms of gender dysphoria. As an internal psychological process saliently connected to the transgender community, gender dysphoria is best conceptualized in the GMSR model

as a proximal stressor (Lindley & Galupo, 2020). Research supports the notion that discrimination from one's environment may contribute to greater gender dysphoria as opposed to gender dysphoria stemming from possessing a trans identity in and of itself (Başar et al., 2016; Schulz, 2018). Specifically, experiences of transphobic discrimination may make more salient the discrepancies between one's sex assigned at birth and gender identity, which may then result in increased gender dysphoria while one attempts to reconcile this dissonance, which may then lead to increased psychological distress.

Emotion Dysregulation

In addition to psychosocial states, it is important to consider risk factors at the trait level. Emotion dysregulation, or deficiencies in emotional awareness and the ability to modulate them (Powers et al., 2015), has been identified as a potent trait-based risk factor for a variety of mental health outcomes (Wolff et al., 2019). One study found that LGBTQ+ discrimination was positively associated with emotion dysregulation (Keating & Muller, 2020). Similarly, repeated exposure to transphobic bigotry may make it more difficult for trans people to regulate or process intense emotional experiences. Additionally, trans people face notable barriers to receiving affirming physical and mental health care (American Psychological Association, 2015; Morris et al., 2020), potentially restricting access to culturally conscious resources for learning emotion regulation strategies. Thus, distal stress may lead to impaired emotional regulatory processes and place transgender individuals at greater risk of psychopathology.

Impacts of the Novel Coronavirus Pandemic on Trans Communities

Although this study was not designed to examine the impacts of COVID-19, the timing of this research necessitates acknowledgment of how the challenges facing the transgender community have been exacerbated further by the novel coronavirus pandemic. Health disparities in preexisting conditions (e.g., diabetes, heart disease, asthma, HIV) may increase the likelihood for trans individuals to experience more severe complications from the virus (Herman & O'Neill, 2020). Additionally, even if trans folx are able to overcome barriers to health care access, they often experience discrimination from health care providers (Grant et al., 2011). The strain on the medical system may create additional barriers to essential gender-affirming medical therapies, all of which may place the transgender community at particular risk during the current crisis (Herman & O'Neill, 2020; Wang et al., 2020). Systems of economic oppression and high rates of poverty and homelessness among transgender folx add an additional layer of risk for this population (Herman & O'Neill, 2020). Emerging data show high levels of LGBTQ+ minority stressors, psychological distress, and other disparities associated with the pandemic (Gonzales et al., 2020; Kidd et al., 2021; Salerno, Pease, et al., 2020). One study examining a small sample of trans youth found that the gender diverse participants experienced more mental health concerns, more mental health service disruptions, and less familial support than their cisgender counterparts during COVID-19 (Hawke et al., 2021). Another study found that gender diverse college students experienced greater psychological distress than cisgender counterparts

(Hunt et al., 2021). To examine transgender experiences with discrimination in this moment provides a critical perspective on the state of mental health and disparities for gender diverse folx during the pandemic.

Current Study

The current study integrates theoretical foundations in gender minority stress to investigate variables relating to negative mental health disparities in transgender young adults. It is hypothesized that higher levels of transphobic distal stress (i.e., external experiences of identity-based social stigma) will predict negative mental health outcomes (i.e., a main effect of distal stress on negative mental health). The current study focuses on psychological distress, a general and prominent mental health concern for trans folx (James et al., 2016; Turban et al., 2020). It is further hypothesized that the previously introduced constructs—gender dysphoria and emotion dysregulation—will mediate the association between distal stress and psychological distress, such that distal stress will be positively associated with gender dysphoria and emotion dysregulation which, in turn, will both be associated with greater psychological distress. In testing these hypotheses, the current study provides a more nuanced understanding of the underlying mechanisms of transgender mental health disparities relevant both to future researchers and current practitioners serving the trans community. Alongside these goals, the current study further seeks to provide additional documentation of the state of transgender mental health in the context of the novel coronavirus pandemic.

Method

Procedure

Data collection and recruitment were conducted via a cross-sectional online survey. Recruitment links were distributed to university LGBTQ+ student centers across the United States in addition to being posted to listservs, online community boards, and social media platforms relevant to the trans community. Advertising materials specified that “anyone ages 18–29 who identifies with a gender identity different from their sex assigned at birth is eligible to participate.” Participants who accessed the survey completed a brief screener to ensure eligibility before being presented with a virtual informed consent detailing the study procedures. The survey took approximately 20 minutes to complete. Remuneration was provided in the form of a raffle entry for one of three \$50 gift cards. Informed consent was obtained from all individual participants included in the study and all study procedures were approved by the institutional review board of the authors' institution.

Participants

A total of 375 people accessed the online survey. Of them, 292 people met the eligibility criteria, provided informed consent, and began the survey. However, 44 completed fewer than 75% of survey items. This sample of $N = 248$ was used only to calculate pandemic stress prevalence. However, nine participants did not complete all items of the distal stress measure. The binary scaling of the GMSR measure, as described below, is incompatible with

mean imputation and thus these participants were also excluded from the main analyses, leaving a final sample of 239 transgender young adults. Aside from the pandemic stress prevalence results, this 239-participant subsample was used in all calculations, including the following demographics, which are documented fully in Table 1.

All participants ($N = 239$) identified with a gender identity other than their sex assigned at birth and were between the ages of 18 and 29 ($M_{\text{age}} = 21.82 \pm 3.01$). The sample was majority white (176 participants or 73.6% of the sample), followed by multiracial (25 or 10.5%), then Asian (21 or 8.8%), Latinx/Hispanic (9 or 3.8%), Black (6 or 2.5%), and Middle Eastern/North African (1 or .4%). The most common sexual orientation reported was queer (111 participants or 46.4% of the sample). Participant gender was split between binary (106 participants or 44.4% of the sample) and nonbinary (133 or 55.6%) identities. Specifically, 34 participants (14.2%) were women, 72 (30.1%) were men, 106 (44.4%) were nonbinary (i.e., explicitly identified as “nonbinary”), and 27 (11.3%) were a gender separate from these three, but also outside the gender binary (e.g., transmasculine, genderqueer, agender). The sample was mostly assigned female at birth (187 participants or 78.2% of the sample). Participants reported being at different stages of transitioning at the time of responding to the survey, with 28 (11.8%) having not begun transitioning, 32 (13.5%) actively considering transitioning, 32 (13.5%) preparing to transition, 117 (49.4%) in the process of transitioning, and 28 (11.8%) fully transitioned.

Measures

Demographics

In addition to traditional demographic items capturing pronouns, age, race/ethnicity, work status, and so forth, transgender-specific demographics (e.g., “Which of the following best describes how you would characterize your status?”) were adapted from the 2015 United States Transgender Survey (James et al., 2016) and another study of transgender individuals in the workplace (Martinez et al., 2017).

For correlations, birth sex was coded 1 = female, 2 = male, gender identity is scored 1 = binary, 2 = nonbinary, race, as in past research (e.g., Lloyd et al., 2019) was coded 0 = monoracial white, 1 = any other response, education was coded by highest attainment where 0 = less than high school, 1 = high school diploma, 2 = some college, 3 = college degree, 4 = professional or graduate degree, and transition status is coded 1 = not begun transitioning; 2 = considering transitioning; 3 = preparing to transition; 4 = in the process of transitioning; 5 = fully transitioned.

Distal Stress

Transgender-specific distal stressors were collected using the Gender Minority Stress and Resilience Measure (Testa et al., 2015). To reduce participant fatigue, only subscales specified as distal stress in the measure development study were included (i.e., gender-related discrimination, rejection, victimization, and nonaffirmation of gender identity, a total of 23 items).

The first three subscales, gender-related discrimination, rejection, and victimization, include statements such as: “I have been rejected by or made to feel unwelcome in my ethnic/racial

community because of my gender identity or expression” with options of “Never; Yes, before age 18; Yes, after age 18; Yes, in the past year.” These 17 items are scored 0 for “Never” and 1 for any other response. The nonaffirmation subscale is scored on a Likert scale from 0 (*strongly disagree*) to 4 (*strongly agree*). The nonaffirmation of gender identity subscale includes statements such as: “I have difficulty being perceived as my gender” scored from 0 (*strongly disagree*) to 4 (*strongly agree*). Higher scores reflected more experiences of minority stress.

The measure has established criterion validity, convergent validity, and discriminant validity (Testa et al., 2015). Cronbach’s alpha for these subscales has ranged from .61 (gender-related discrimination) and .93 (nonaffirmation of gender identity). The present study found similar reliability rates, with Cronbach’s alpha ranging from .65 (discrimination) to .87 (nonaffirmation). To more accurately capture the various dimensions of distal transgender stressors, and in following past research (Brennan et al., 2017), these four subscales were summed to create an overall distal stress score, with higher scores indicating greater experiences of gender-related distal stress. Brennan et al. (2017) observed a Cronbach’s alpha of .83 for this composite measure where the current study found a reliability of .80.

Gender Dysphoria

Gender dysphoria was measured with the Utrecht Gender Dysphoria Scale-Gender Spectrum (McGuire et al., 2020). The UGDS-GS is an adapted version of the Utrecht Gender Dysphoria Scale (Cohen-Kettenis & van Goozen, 1997; Schneider et al., 2016). In the original measures, there are two different 12-item scales: one administered to female-to-male and the other to male-to-female transgender people. The original measure is, therefore, not inclusive of nonbinary-identifying transgender individuals, preventing researchers to accurately capture the full diversity of experiences of the gender diverse community.

As such, the current study used an adapted 18-item version of the scale designed by McGuire and colleagues (2020) to encompass all gender identities, referring instead to “assigned sex” and “affirmed gender” to allow the use of only one scale for all participants, ensuring greater consistency and validity between participants with different identities. This scale has two subscales: gender dysphoria (14 items) and gender affirmation (4 items), with the former subscale being used for analyses in the current study. Items include: “I wish I was born as my affirmed gender” and “I hate my birth assigned sex” rated on a 5-point Likert scale from *disagree completely* to *agree completely*, with higher scores reflecting more gender dysphoria. Recent research has established construct validity for transgender, nonbinary, and cisgender LGB individuals, indicating its validity for measuring gender dysphoria in a variety of populations (McGuire et al., 2020). Items within each subscale were summed and the 14-item gender dysphoria subscale was used in analysis. The current study observed a Cronbach’s alpha of .87 for the gender dysphoria subscale.

Emotion Dysregulation

Emotion dysregulation was measured with Emotion Dysregulation Scale-short version (EDS-Short, Powers et al., 2015). It is a summed score of 12 items scored on a seven-point (*not true* to *very true*) scale such as “Emotions overwhelm me,” with higher

Table 1
Full Participant Demographics

Variable	<i>n</i>	% of Sample
Race		
White	176	73.6
Biracial/Multiracial	25	10.5
Asian	21	8.8
Latinx/Hispanic	9	3.8
Black	6	2.5
Middle Eastern/North African	1	.4
Another identity	1	.4
Gender		
Nonbinary	106	44.4
Man	72	30.1
Woman	34	14.2
Another Gender (e.g., transmasculine, genderqueer, agender)	27	11.3
Binary versus nonbinary gender identity		
Nonbinary (e.g., nonbinary, genderqueer, agender)	133	55.6
Binary (e.g., woman, man)	106	44.4
Sex assigned at birth		
Female	187	78.2
Male	52	21.8
Pronouns^a		
They/Them	140	58.6
He/Him	118	49.4
She/Her	66	27.6
No pronouns	18	7.6
Ze/Zir	8	3.3
Another pronoun(s)	5	2.1
Transition status		
Not begun transitioning	28	11.8
Actively considering transitioning	32	13.5
Preparing to transition	32	13.5
In the process of transitioning	117	49.4
Fully transitioned	28	11.8
Sexual orientation^a		
Queer	111	46.4
Bisexual	84	35.1
Gay	32	13.4
Asexual	42	17.6
Another sexual orientation (e.g., pansexual, demisexual)	38	15.9
Lesbian	30	12.6
Uncertain/Questioning	24	10.0
Heterosexual	8	3.3
Birthplace and civic engagement		
Born in the United States	212	88.7
Registered to vote	205	85.8
Health insurance		
Has health insurance	213	89.1
Relationship status		
Single	139	58.2
In a committed relationship	87	36.4
Married	11	4.6
Divorced	2	.8
Income		
<\$25,000	75	32.1
\$25,000–\$49,999	54	23.0
\$50,000–\$99,999	42	17.9
>\$100,000	63	26.9
Education		
Less than high school diploma	2	.8
High school diploma	33	13.8
Some college	108	45.2
College degree	81	33.9
Graduate or professional degree	15	6.3

(table continues)

Table 1 (continued)

Variable	<i>n</i>	% of Sample
Employment^a		
Student	129	54.0
Part-time employed	69	28.9
Unemployed	64	26.8
Full-time employed	47	19.7
Self-employed	10	4.2
Another status (e.g., internship, multiple jobs, volunteer)	8	3.3
Specified disability as part of employment status	6	2.5

^a Demographics do not sum to 100% because participants could select more than one option.

scores indicating greater emotion dysregulation. Construct validity for the shortened measure was found in comparisons to a more established measure of emotion dysregulation (i.e., Difficulties in Emotion Regulation Scale) and in criterion validity analyses with a variety of mental health outcomes, such as depression, posttraumatic stress symptoms, and problematic substance use (Powers et al., 2015). Internal consistency for the measure was also high, with a Cronbach’s alpha of .93 during measure development (Powers et al., 2015) and .93 in the current study.

Psychological Distress

Psychological distress, indicating negative mental health symptomatology, was measured with the six-item Kessler Psychological Distress Scale (K6, Kessler et al., 2002). This measure includes items asking about distress over the last 30 days (e.g., “During the last 30 days, about how often did you feel depressed?”). Each item was scored on a scale from *None of the time* (0) to *All of the time* (4), with higher scores indicating greater distress. For clinical usage, past research has identified a summed K6 score ≥ 5 to be indicative of moderate mental distress and a score ≥ 13 to be indicative of severe mental illness (Prochaska et al., 2012). For statistical analyses, K6 scores were treated as a continuous variable. Large-scale studies have found evidence of the instrument’s construct validity (e.g., correlations to clinical ratings of mental illness) and internal reliability. Subsequently, this measure has been widely used in epidemiological research and clinical settings (Kessler et al., 2010; Prochaska et al., 2012). Cronbach’s alpha was .89 during measure development and .84 in the current study.

Pandemic Stressors

Stressors relating to the coronavirus pandemic were measured using the Pandemic Stress Index (Harkness, 2020). This measure examines behavioral changes and stressors associated with COVID-19 (e.g., “Have you lost work due to COVID-19;” “How much is/did COVID-19 impact your day-to-day life;” “Which of the following are you experiencing or did you experience during COVID-19”). As recommended by Harkness (2020), additional items relating to the experience of transgender individuals were also added (e.g., “Have you had problems being able to access gender-affirming health care due to COVID-19”). Each item was scored separately, mainly on a binary of yes or no (i.e., whether the participant experienced the stressor). To examine the experience of pandemic stress more broadly, a composite score using 16 binary-coded items that specifically reflected pandemic-related

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stress, per the approach of Morelen et al. (2022). Scores on this measure could range from 0 to 16, with 16 indicating that a participant experienced all 16 stressors. Cronbach's alpha was .63 in the current study.

Data Analysis Approach

The analytic plan was specified prior to data collection. All analyses were conducted using SPSS (v28) with a significance threshold of $p < .05$. The data were first evaluated with missing values analyses and the outcome variable underwent a skewness and kurtosis check. Mediation hypotheses were tested with linear regression using Hayes' (2013) approach and PROCESS extension, which is an add-on tool for SPSS that generates regression analyses for moderation and mediation hypotheses with options for bootstrapping. A single multiple mediation model was run for psychological distress with gender dysphoria and emotion dysregulation as mediators with 10,000 bootstrap samples for bias correction and to establish 95% confidence intervals. All reported coefficients are standardized coefficients.

Regarding pandemic experiences, prevalence of various pandemic-related impacts is reported to elucidate specific pandemic-related impacts within the community. Additionally, a linear regression was run to test the association between the composite pandemic stress score and psychological distress.

Data Screening and Preparation

No participants failed either of the two attention check items included in the survey. Missing data ranged .4% (one participant; various items) to 2% (five participants; GMSR items 1, 2, and 5). These data, as tested by Little's missing completely at random analysis returned an insignificant chi-squared statistic, $\chi^2(730) = 687.08$, $p = .87$. Mean imputation (Parent, 2013) was thus used to account for missing items, aside from demographic items and subscales of the GMSR for which doing so would have produced non-meaningful or inaccurate values. K6 scores were found not to be skewed (skewness = .047, kurtosis = $-.315$).

Results

Descriptive Results

Psychological Distress Prevalence

High rates of psychological distress were observed in the sample. Specifically, 95.8% of the sample scored ≥ 5 indicating moderate psychological distress (Prochaska et al., 2012), 75.3% scored ≥ 10 indicating clinically significant distress (Lace et al., 2020), and 53.1% scored ≥ 13 indicating severe psychological distress (Kessler et al., 2010). These results are provided in Table 2.

Table 2
K6 Clinical Cutoffs

Cutoff (Score; Citation)	<i>n</i>	% of Sample
Moderate Psychological Distress (≥ 5 ; Prochaska et al., 2012)	229	95.8
Clinically Significant Distress (≥ 10 ; Lace et al., 2020)	180	75.3
Severe Psychological Distress (≥ 13 ; Kessler et al., 2010)	132	53.1

COVID-19 Variables

The current sample experienced a variety of challenges relating to the COVID-19 pandemic. A small proportion of participants failed to complete certain Pandemic Stress Index items and so these results are based on subsamples of minimum $n = 245$ to the full sample of $N = 248$. In terms of the pandemic's impact, 156 (63.4%) reported that it had "Very much" or "Extremely" impacted their day-to-day life while only 38 (15.4%) reported "A little" impact or no impact at all. Additionally, 198 participants (79.8%) reported experiencing loneliness during the pandemic. Living arrangements in some way changed for 107 participants (43.7%). Of these 107, 81 (75.7%) reported living with parents during COVID-19. Those who moved back with parents were, on average, younger than the rest of the sample, $t(243) = -6.21$, $p < .001$. A total of 85 participants (34.6%) reported having problems accessing gender-affirming care owing to COVID-19. In terms of the professional impacts of the coronavirus, 166 participants (66.9%) reported attending school from home due to the pandemic, 129 (52%) reported experiencing some sort of financial loss (e.g., job loss, investment loss, travel-related cancellation loss), 48 (19.4%) reported losing their primary source of income, 61 (24.7%) reported losing a work opportunity that was not their primary source of financial support (e.g., unpaid internship, they were already dependent on someone else's income, etc.), 111 (44.9%) reported working from home, and 54 (21.9%) reported returning to work in a physical environment with exposure to other people. Most of the sample (201 participants or 81%) reported following media coverage related to COVID-19 with an average reported daily consumption of 1.84 hr ($SD = 1.74$). The composite COVID-19 stress score was positively associated with psychological distress, ($\beta = .36$, $SE = .12$, $t = 5.95$, $p < .001$).

Correlational Analyses

A correlation matrix with all noncoronavirus study variables is provided in Table 3. Any significant correlates with the outcome variable were identified and included as covariates in subsequent mediation analyses. Specifically, transition status ($r = -.16$, $p = .01$) and income ($r = -.22$, $p < .01$) were significantly associated with psychological distress. Notably, five participants failed to report annual household income while two failed to report transition status, resulting in their exclusion from analyses and a reduced final sample size for the psychological distress model of ($n = 232$).

Direct Effects and Mediation Analyses

First considering the direct effects of the model variables, distal stress ($\beta = .17$, $SE = .04$, $t = 2.76$, $p = .006$), gender dysphoria ($\beta = .12$, $SE = .03$, $t = 2.02$, $p = .04$), and emotion dysregulation ($\beta =$

.41, $SE = .02$, $t = 6.56$, $p < .001$) were all significantly associated with psychological distress, while income and transition status were not ($R^2 = .38$). The full results from this analysis are presented in Table 4.

Next, using PROCESS v4 (Hayes, 2013), the indirect effects of distal stress on psychological distress through the proposed mediators, gender dysphoria and emotional dysregulation, were examined. The indirect effect of gender-related distal stressors on psychological distress through gender dysphoria ($\beta = .05$, 95% CI [.001, .10]) and emotion dysregulation ($\beta = .16$, 95% CI [.09, .23]) were both significant and positive. The overall model is illustrated in Figure 1 and accounted for 20.6% of the variance in psychological distress, $F(3, 228) = 19.67$, $p < .001$.

Discussion

The current study found exceptionally high rates of psychological distress, with 95.8% reporting moderate psychological distress (Prochaska et al., 2012) and 53.1% of the sample reporting severe psychological distress (Kessler et al., 2010). The prevalence of severe psychological distress observed here is higher than in past samples of transgender individuals (Turban et al., 2020) and higher than COVID-19-era samples of LGBTQ+ young adults on the Kessler 10 scale (43%; Salerno, Pease, et al., 2020), indicating disparities that could be related both to pandemic-related vulnerabilities (further illustrated by the significant relation between pandemic stress and psychological distress) and to unique experiences of gender minority (vs. sexual minority) young adults.

Moreover, mediation analyses further revealed complex relations between the variables of interest, specifically finding direct effects and two mediation pathways in the relation between anti-transgender distal stress and psychological distress. As hypothesized, distal stress was directly associated with psychological distress. Distal stress was positively associated with gender dysphoria and emotion dysregulation. Gender dysphoria and emotion dysregulation mediated the relation between distal stress and psychological distress, as expected. Distal stress was positively associated with gender dysphoria and emotion dysregulation which, in turn, were both positively associated with psychological distress.

Mediation Findings

The current study is the first, to the authors' knowledge, to examine the link between transphobic discrimination and gender dysphoria and its mediating effect on psychological distress. Gender dysphoria, in addition to its definition as distress associated with assigned sex/gender identity incongruence, has also existed as a diagnosis in various editions of the *Diagnostic and Statistical Manual of Mental Disorders (DSM)*; Beek et al., 2016; Lev, 2013). Although current findings reflect how symptoms of gender dysphoria can create clinically significant levels of psychological distress, treating gender dysphoria as a mental illness itself may pathologize transgender identity more broadly, failing to consider that the source of distress and discomfort may not be the internal misalignment between birth sex and identity but rather the external rejection and alienation trans folk experience from deviating from the norm. This may be a logical extension also of gender role conflict theory (O'Neil, 1981; Wester et al., 2010): for men who experience distress relating to strict gendered expectations, we do not view the dissonance between society's expectations and their own sense of self and diagnose them with "masculine dysphoria," rather we view the distress as symptomatic of social norms and expectations. Similarly, we might view transgender individuals experiencing gender dysphoria as experiencing conflict between society's cisnormative expectations and their own sense of self.

As Beek and colleagues (2016) observed, the concept of gender dysphoria has consistently evolved over the years and over different iterations of the *DSM* as our knowledge on this population expands and the sociopolitical climate gradually becomes more accepting of transgender folk. The 11th edition of the International Statistical Classification of Diseases and Related Health Problems recategorized gender-related diagnostic categories with "gender incongruence," considering it a "condition related to sexual health" rather than a "mental and behavioral disorder" (World Health Organization, 2019). Although a step in the right direction toward depathologization, it points to a larger critique of the Western medical model that often requires diagnosis to access medical care and to a need to continue educating providers across the globe on trans-competency, adjusting policies to allow for easy access to affirming care, and reconceptualizing this health care as part of a human right to gender self-determination and freedom from discrimination (Suess Schwend, 2020).

Table 3

Means, Standard Deviations, and Correlation Coefficients for Study and Demographic Variables

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1. Birth sex—male	—	—	—									
2. N.B. gen. identity	—	—	-.23**	—								
3. Age	21.77	3.00	.02	.09	—							
4. Person of color	—	—	.01	.05	.07	—						
5. Education	—	—	-.09	.13*	.63**	.02	—					
6. Income	—	—	-.08	.04	-.18**	-.02	-.04	—				
7. Trans. stat.	—	—	-.01	-.30**	.12	-.16*	.12	.08	—			
8. Distal stress	23.54	7.24	.00	.17**	-.04	.14*	.03	-.016*	-.15*	—		
9. Gen. dysphoria	54.42	9.13	.13*	-.36**	-.09	.00	-.17**	-.12	.16*	.35**	—	
10. Emo. dysreg.	59.38	15.20	.04	.11	-.13*	.06	-.09	-.20**	.16*	.43**	.42**	—
11. Psyc. distress	12.85	4.90	.01	.03	-.12	-.05	-.09	-.22**	-.16*	.41**	.36**	.57**

Note. N.B. Gen. Identity = nonbinary gender identity; Trans. stat. = transition status; Gen. dysphoria = gender dysphoria; Emo. dysreg. = emotional dysregulation; Psyc. distress = psychological distress.

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

Table 4
Direct Effects on Psychological Distress

Variable	β	SE	<i>t</i>	<i>p</i>
Distal stress	.17	.04	2.76	.006
Gender dysphoria	.12	.03	2.02	.04
Emotion dysregulation	.41	.02	6.56	<.001
Covariate: Income	-.09	.05	-1.59	.11
Covariate: Transition status	-.11	.23	-1.93	.06

Building on emerging conceptualizations of gender dysphoria as a proximal stressor (Galupo et al., 2019; Lindley & Galupo, 2020), the current study provides support, based on quantitative evidence, for a theoretical shift in our understanding of gender dysphoria as being etiologically linked to systems of oppression and as a mediator of the relation between antitrans distal stress and negative health outcomes. Additional research with larger sample sizes and diverse age groups is necessary to explore this oppression hypothesis of gender dysphoria.

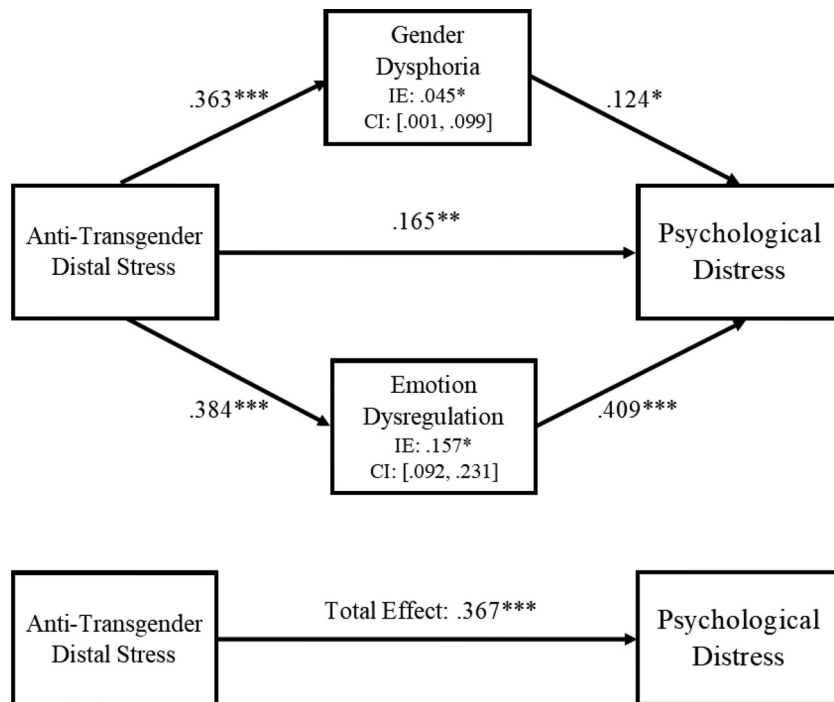
The emotion dysregulation findings are aligned with past research on LGB individuals that found a mediating effect of emotion dysregulation and related constructs on the relation between discrimination and negative mental health outcomes (Hatzenbuehler et al., 2009; Reitzel et al., 2017). The present study thereby expands this minority stress finding specifically to the experiences of gender diverse individuals, suggesting that transphobic discrimination may make it more difficult for trans people to regulate emotions, which may then contribute to psychological distress. Future research, then, into how emotion regulatory processes

develop, fluctuate, and become deficient across the life span may be warranted to better understand the nuances of this relation.

Diversity Within the Trans Community

It is also worth discussing how most of the sample for the current study identified as a nonbinary gender identity, in contrast to James and colleagues' (2016) estimate that one third of the transgender population in the United States fell outside of binary gender categories (i.e., woman or man). Although this may be a sampling bias limitation, it could also be reflective of how, despite the fact nonbinary people have existed across human history, nonbinary conceptualizations of gender and the language to describe them have only entered the public consciousness (among straight/cisgender people especially) relatively recently (Fiani & Han, 2018). Within-group differences are also hinted at by Variable 2 in Table 3 (gender identity: binary = 1; nonbinary = 2), where nonbinary identity was negatively associated with status of transition and gender dysphoria and positively associated with distal stress. Although the UGDS-GS measure was validated by McGuire and colleagues (2020) for binary transgender and nonbinary/genderqueer populations, it is worth noting that there have been concerns around gender dysphoria measures not fully capturing within-group differences in experiences with gender dysphoria, suggesting that a more specific measure of gender dysphoria for nonbinary people could be helpful (Galupo & Pulice-Farrow, 2020). Still, our findings suggest that, since such explicit rejections of the gender binary carry with them added stigmatization and ignorance from the general population (Matsuno & Budge, 2017), nonbinary people may experience more discrimination (e.g., misgendering

Figure 1
Mediation Analysis Results: Psychological Distress



Note. IE = indirect effect; CI = 95% confidence intervals. $^*p < .05$, $^{**}p < .01$, $^{***}p < .001$.

with singular they/them pronouns or neo-pronouns) and feel like others do not view their nonbinary identity accurately or authentically. The regression analyses of the current study do not examine the differences in experiences between binary and nonbinary transgender individuals given the small sample sizes and the nonsignificant correlation between gender identity and the outcome variable, presenting a limitation. However, these correlations provide directions and implications for future researchers interested in nonbinary and other diverse gender identities, suggesting that observed health disparities for nonbinary versus binary transgender individuals (Burgwal et al., 2019) may be related to differential distal stress experiences.

In addition to differences between nonbinary and binary trans identities, it is important to consider diversity across sex assigned at birth. Although all participants in the study face the common social oppression of transphobia, the manifestations of distal stress experiences may also depend on which norms society views a trans individual as violating, presenting a limitation in our approach. For example, transmisogyny, or the particular form of prejudice faced by trans-feminine people based on society's bias against and harsh policing of femininity (Colliver, 2021), may create distinct and salient dangers and social stressors for participants who were assigned male at birth (and perceived as violating masculine expectations and encroaching on womanhood). With the low proportion of assigned male at birth participants and the significant relation between gender dysphoria and sex assigned at birth in the present study, there are likely important within-group nuances in the distal stress experiences that we are unable to elucidate here.

Impacts of the COVID-19 Pandemic

It is evident that both binary and nonbinary transgender young adults are experiencing high rates of a variety of stressors relating to COVID-19. Future researchers may seek to understand how these stressors continue to impact the transgender community, especially as the prolonged impacts of the pandemic begin to emerge (e.g., economic depression, evictions, lack of welfare programs, overwhelmed social support services). Additionally, given the potentially more limited access to resources and social support systems during this time, investigators may seek to also document what other coping mechanisms, both helpful and maladaptive, that trans young adults have used during the pandemic (e.g., online text-based platforms; Fish et al., 2020). Researchers have identified resilience as a buffer to the impacts of the pandemic, suggesting radical acceptance, community building, and other resilience-heightening strategies as potential areas of intervention (Goldbach et al., 2021; Gonzalez et al., 2021), while simultaneously acknowledging the injustice in the need for resilience in the first place and advocating for better resources and structural change in the context of the pandemic (Gilbert et al., 2021). It may also be valuable to explore additional potential mediators to better understand the mechanisms of mental health disparities among people with minoritized gender identities.

Implications for Practitioners

The present study identified gender dysphoria and emotion dysregulation as mediators for the relation between transgender distal

stress and psychological distress, providing two constructs for practitioners to focus on when working with transgender clients. In the case of gender dysphoria, it is important not only to work on addressing feelings of dissonance between assigned sex and gender identity but also to explore the influence of cisnormative systems and discrimination in the manifestation of dysphoric symptomatology. Additionally, given the exceptionally high observed rates of psychological distress, practitioners working to mitigate the mental health impacts of COVID-19 and/or support the transgender community should consider these findings when providing services and developing culturally cognizant interventions. Considering binary, cisnormative systems of gender to be the root of antitransgender prejudice (i.e., distal stress) and trans mental health disparities, these findings further support calls for practitioners to recognize their ethical obligation to critically examine and fight preconceived ideas of gender and sex and work to avoid perpetuating transphobia in their own work (Markman, 2011; Morris et al., 2020; Ottenwaelder et al., 2021).

Implications for Public Policy

In the middle of the coronavirus pandemic, the United States Department of Health and Human Services (2020) attempted to remove health care discrimination protections for LGBTQ+ folk. Similarly, Perez-Brumer and Silva-Santisteban (2020) documented an example from Peru on how binary gendered policies during times of crisis can heighten violence against transgender folk. In 2021, a record-setting number of antitransgender bills were introduced in state legislatures across the United States (Ronan, 2021), with the transphobic rhetoric and disinformation surrounding these policy proposals further harming the mental health and structural experiences of the trans community (Paceley et al., 2021). Each case provides a prime example of the continued use of policy measures to reify transgender oppression.

Within the context of the current study, it can be inferred that such structural, policy-based contributors to transgender distal stress are linked to mental health disparities. Indeed, research has recently emerged suggesting that country-level structural stigma (i.e., discriminatory laws) were associated with lower life satisfaction for trans people in the European Union (Bränström & Pachankis, 2021). Thus, legislators and mental health advocates should advance policy agendas that seek to address these disparities and their roots in systems of oppression, push against transphobic rhetoric and disinformation, and take proactive measures to erase future disparities.

Limitations

Results should be interpreted within the context of the study's limitations. First, these data are cross-sectional and, as such, any implication of causality is solely grounded in theoretical frameworks. To the authors' knowledge, the only study that has thus far addressed this limitation with longitudinal methodology was unable to replicate past GMSR indirect effect findings, although these null findings may have been limited by an interval between data collection waves of only one year (Lloyd et al., 2019). Past research also suggests that trans youth and young adults often do not disclose their identity to health professionals, potentially attenuated by factors such as parental support (Sequeira et al., 2020).

It is reasonable, then, to expect a sampling bias in both cross-sectional and longitudinal studies interested in transgender youth and young adults, whose ability to access trans spaces, openly disclose identity, or otherwise participate in long-term trans-relevant research could be limited by familial influences or concerns about discrimination from medical or academic establishments.

The proportion of white-identifying participants in this study is higher than the general U.S. population, which may be attributable to sampling biases commonly observed in Internet-based surveys (Dillman et al., 2014) and/or the usage of university-based recruitment methods to obtain large portions of the study. Exclusion of people of color in research has been a long-standing issue (DeBlarere et al., 2010; George et al., 2014), with participants often validly concerned about privacy and historical injustices perpetrated by academic institutions and/or facing barriers to participation due to competing demands (e.g., multiple jobs) alongside inadequate compensation. Additionally, researchers often fail to engage communities of color in all stages of the research process, creating issues like research questions that do not address intersectional community needs and/or recruitment messages that use academic identity-related language rather than language used by the community to describe themselves. Researchers and funding agencies should engage in intentional efforts to involve community members and organizations in all stages of the research process and ensure that participants are justly compensated for their time and labor.

Regarding the current study, this issue may limit the generalizability of findings to transgender people of color. Intersectionality theory (Crenshaw, 1991), which posits that overlapping systems of oppression may interact and compound in unique ways, may suggest that transgender people of color, owing to the interaction between transphobic and racist systems of oppression, experience unique vulnerabilities that neither white transgender people nor cisgender people of color face on their own (Lefevor et al., 2019). Perhaps transgender people of color more strongly experience the mediation pathways proposed by this study or experience different mechanisms entirely. Either way, incorporating an intersectional approach explicitly into future studies of transgender experiences is imperative to properly understand the nuances of various systems of oppression (e.g., racism, ableism, classism) and provide competent services to all members of the transgender community.

This study also takes a disparity-focused approach to examining transgender experiences. Although understanding minority stress and health disparities is important, it is also important to acknowledge the strengths of this population and the ways trans people find buffers against minority stress. Past researchers have especially investigated the protective effects of general resilience and community and collective action for trans and LGBTQ+ populations (Breslow et al., 2015; Goldbach et al., 2021; Stone et al., 2019). Future research may seek to expand on the mechanisms examined in the current study and incorporate more strengths-focused constructs into their investigations, while simultaneously acknowledging the injustice of the oppressive systems contributing to the need for this resilience.

Conclusion

The current study examined mechanisms of minority stress-related risk in a moderately large sample of transgender young

adults amid a global crisis. As scientists and practitioners seek to serve gender minoritized populations, especially within the context of the coronavirus pandemic, transphobic policy discourse, and other challenging sociopolitical circumstances, understanding these mechanisms will be critical to both remediate the damage done by and eventually fully dismantle long-enshrined oppressive social practices. Indeed, we share an overarching, urgent responsibility to critically rethink binary/cisnormative conceptualizations of gender to mitigate these observed mechanisms of risk and achieve a more equitable society.

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