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Running head: TNB SOCIAL SUPPORT

**Understanding differences in types of social support and their effects on mental health over time for trans and nonbinary adults**

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**Abstract**

Although research has shown that social support generally is beneficial to mental health among trans and nonbinary (TNB) adults, less is known regarding what forms of support and the degree to which they mitigate the harms of minority stress on mental health over time. This study investigated differences in types of social support and their association with mental health over time in a sample of 2,411 TNB adults, predominantly younger in age (53% 18-30 years old), diverse in sexual orientation (97.5%, LGBQA+, 2.5% straight/heterosexual), gender identity (53.3% non-binary, 26% trans man, 12.4% trans woman), and similar in race and ethnicity to the US national population. We conducted a latent profile analysis (LPA) to identify social support typologies. A three-profile solution classified participants into a Low (39.6%), Moderate (40.7%), or High Support profile (19.7%). Significant variability in gender-related support experiences was noted for those in the Moderate and High Support profiles, while those in the Low Support profile had almost uniformly little to no support from family. Mental health outcomes differed between the profiles; Low Support participants reported significantly worse depression and PTSD symptoms; demographically, the greatest proportion of participants with marginalized identities clustered in the Low Support profile. Finally, we tested profile membership as a moderating variable in the association of minority stressors with mental health over time. Few significant differences emerged between groups, suggesting that being in a higher support profile may not necessarily buffer the harms of minority stress on mental health over time. Intervention implications are discussed.

*Keywords:* minority stress, latent profile analysis, social support, transgender, nonbinary

Public health significance: Trans and nonbinary (TNB) individuals can be clustered together based on the types of social support experienced. While those in higher social support

groups reported better mental health than those with less social support, they were not protected

from the harmful effects of anti-TNB experiences on mental health over time.

**Understanding differences in types of social support and their effects on mental health over time for trans and nonbinary adults**

Deep and meaningful social relationships are essential to well-being (Feeney & Collins, 2015). Relationships are important avenues by which various types of social resources (e.g., information, emotional support, goods and services) are provided, also referred to as social support (Cohen & Syme, 1985; Tardy, 1985). Research to date has largely focused on the role of social support in mitigating the harms associated with stress and other adverse events (Cohen & Wills, 1985). However, social support is consistently related to better mental health and well-being as well (Feeney & Collins, 2015). Among transgender and nonbinary (TNB) people, similar effects have been documented; theory and empirical research demonstrate social support as a potential buffer against the harms of stigma and stigma-related stressors and mental health, while also being associated directly with better psychological well-being (Barr et al., 2016; Budge et al., 2014; Pflum et al., 2015) and decreased mental health concerns, such as anxiety and depression (Durwood et al., 2021; Tebbe & Moradi, 2016). However, findings have been mixed regarding how and from whom various types of social support hold beneficial effects on mental health and well-being. As a result, this study aims to address an important gap in the literature by exploring patterns of social support among TNB people and the extent to which distinct social support types may mitigate the differential and adverse effects of minority stress over time.

**Social Support among Trans and Nonbinary People.** Mixed findings regarding what types of effects (i.e., direct, moderating, mediating) occur related to mental health among TNB populations may be due in part to how research has operationalized social support. To date, researchers have investigated different sources (e.g., family, friends) and different types of support

(e.g., emotional, instrumental). Much of the research to date in TNB communities has focused on emotional support, which can be defined as the provision of empathy, love, trust, and caring (Heaney & Israel, 2008), and typically in samples that have skewed younger in age for studies with adults. Importantly, some age or generational variation may exist within TNB populations, with prior research showing that general social support levels have been lower among TNB older adults compared to older adult cisgender LGB peers, though TNB older adults have reported larger social networks and greater involvement in spiritual or religious activities (Fredriksen-Goldsen et al., 2014; Lombardi, 1999). Within the larger literature, survey-based research has largely operationalized emotional support in general forms (e.g., "I can talk about my problems with my friends" [Zimet et al., 1988]). However, qualitative research has documented how gender validation and affirmation are essential population-specific forms of emotional support for psychological well-being for TNB people, particularly during critical periods of gender identity development (e.g., transition) (Lewis et al., 2023; Medico et al., 2020).

Instrumental support, or the provision of tangible aid and services (e.g., food, money, or a safe place to sleep) that can assist someone in need (Heaney & Israel, 2008), is another form of support that is essential for many TNB people (Sherman, Clark, et al., 2020; Sherman, Poteat, et al., 2020). Because instrumental support addresses daily functioning and survival, it may have a greater benefit than emotional support when there is a higher material need. For TNB individuals who experience multiple marginalization based on race and socioeconomic status, instrumental support has been found to mitigate distress and promote well-being, over and above emotional connection and support (Sherman, Clark, et al., 2020; Sherman, Poteat, et al., 2020).

**Social Support as a Buffer of Minority Stress.** TNB populations experience higher

rates of health disparities than the general population with research linking these disparities to

minority stress (Flentje et al., 2021; Tebbe & Moradi, 2016; Testa et al., 2015). Minority stress is

defined as stress that occurs as a result of how identity-based stigma and oppression manifest for

individuals with marginalized identities (Brooks, 1981; Meyer, 2003). For TNB people, minority

stressors include experiences of prejudice, discrimination, harassment, violence, misgendering,

internalized stigma, and stress surrounding identity disclosure (Flentje et al., 2021; Tebbe &

Moradi, 2016; Testa et al., 2015). While evidence has consistently found direct mental health

promotive effects of social support among TNB people (Budge et al., 2013; Tebbe & Moradi,

2016), research has investigated the degree to which social support might act to mitigate the harm

of minority stress on the mental health and well-being of TNB individuals and communities

(Carter et al., 2019; Johnson et al., 2021). This body of research aligns with the stress-buffering

hypothesis, which is the notion that in response to stressful life circumstances, social support may

protect the individual from harm (Cohen & Wills, 1985).

However, Cohen and Wills (Cohen & Wills, 1985) argue that the observed relationships

between social support and mental health and well-being will be determined by how social

support is conceptualized and operationalized. When social support is operationalized to capture

forms of support that are directly responsive to the stressful life event, it is more likely to buffer

the adverse harm of that event. When measured as a more global perceived availability of social

support, its main effect is directly on health and well-being (Cohen & Wills, 1985). This likely

helps to explain findings in prior research with TNB people, in which social support's moderating

effect on minority stress with mental health has been mixed (Carter et al., 2019; Rimmer et al.,

2022). When social support buffers the impacts of stress on mental health, it often nullifies the

association of negative life events (including minority stress) and adverse mental health outcomes

for individuals across the lifespan – for example, in a recent study of TNB children aged 3 to 15,

family, peer, and school support for a child's gender identity buffered the association of gender-

related victimization and internalizing symptoms (Durwood et al., 2021). Among trans adults

who reported higher levels of social support, there was no association of misgendering (a

population-specific minority stressor) with depression and stress compared to those with lower

levels of social support (McLemore, 2018). Finally, among trans and gender diverse women,

greater emotional social support from family and friends buffered the association between trauma

symptoms and alcohol use (Johnson et al., 2021).

**Nature of Family Support.** Research has sought to investigate what sources of support

may matter most. For example, research has found that various sources of emotional support were

associated with better psychological outcomes (i.e., anxiety, depression, resilience), but family

support had the strongest effect and was the only source of social support associated with

resilience (Puckett et al., 2019) in a sample of TNB adults. In another study with TNB youth (13

to 21 years old), participants with greater family support reported higher quality of life and were

less likely to report experiencing a mental health problem in the last year (Weinhardt et al.,

2019). However, in this same study, friend support – and not family support – was positively

associated with connectedness, pride, and meaning in life, suggesting that different sources of

support may have different effects. In lesbian, gay, bisexual, and trans (LGBT) youth aged 16-20

at enrollment who participated in a 5.5-year longitudinal study, family support (operationalized

as general perceived availability of emotional support) was a significant factor in psychological

distress levels and trajectories over the course of the study (McConnell et al., 2016). Researchers

created latent profiles of social support across three sources of emotional support: friends,

significant other(s), and family. Individuals with high levels of family support at enrollment had the lowest baseline levels of psychological distress compared to their peers (those with higher levels of friend and significant other support but low family support, and those with low support across all three sources). For individuals with higher levels of non-family support and low family support at baseline, family support increased during the study; this increase was, in turn, associated with the largest reduction in psychological distress over time (McConnell et al., 2016).

Family support has been qualitatively described as essential to psychological well-being, particularly among TNB youth. In a large online study of 249 TNB youth aged 14-18, nearly 40% identified family – both immediate (parents, siblings) and extended (grandmothers, cousins, aunts) family – as primary sources of support (Shah et al., 2022). Regarding the types of support family members provided, participants identified the family's advocacy for TNB youth rights and as strong allies in the face of transphobia. Extended family members appeared to offer a safe space for TNB youth to feel accepted and welcome, particularly when immediate family members were not accepting. For the large positive impact family support may have for TNB individuals, it is not surprising that family rejection was described as particularly painful and harmful to psychological well-being, even with other supports in place (Shah et al., 2022). What is less clear is the degree to which TNB-affirming family support may be associated with mental health outcomes among TNB adults who may have different social, emotional, and practical needs given greater independence than youth. Prior literature suggests that different types of support and support from various sources may function differently for TNB people. However, the literature has been limited in its investigation of forms of support beyond emotional support and their effects on mental health over time.

## Present Study

In the present study, among a large national sample of TNB participants, we investigated social support, which included perceived availability of emotional support, social connectedness, and supportive and gender-affirming experiences from family. To operationalize social connectedness for the present study, we used a measure of its inverse, social isolation, which assessed social dynamics related to the general presence (or lack thereof) of relationships in participants' lives. For family support, we used a novel index created with input from LGBTQIA+ community members through a Community Advisory Board and researchers providing oversight and guidance to the larger study through a Research Advisory Board. This index aims to capture the provision of various forms of family support. Because these forms of support may be independent of each other – someone may endorse feeling supported in general by others, but they may not have supportive experiences from family members related to their gender – we explored how types of social support form distinct support profiles and whether any differences between profiles emerged related to this study's mental health outcomes (anxiety, depression, PTSD symptoms). We also investigated to what extent these profiles affect minority stress trajectories on mental health over time.

We tested differences in the strength of the association of minority stressors and mental health in a cross-lagged two-wave longitudinal model. Distal and proximal minority stress at Year 2 was hypothesized to positively predict anxiety, depression, and PTSD symptoms at Year 2, controlling for autoregressive effects at Year 1. We hypothesized that the strength of the effects of minority stressors on mental health will be weaker for those in higher social support profiles compared to individuals in lower social support profiles.

**Method**

**Participants**

There were 2,411 gender-minority adult participants in this study. Participants were part of [masked for review]. The [masked] study is a large, national, dynamic, longitudinal cohort study of sexual and gender minority adults with ongoing recruitment that was initiated in 2017 [masked]. Participants were recruited through numerous community partner organizations and stakeholders [masked], in-person and online activities and community events, and online advertising and engagement. [Masked] community partners helped to disseminate information about [masked], how to participate, and [masked]'s overall aim to improve the health of LGBTQIA+ people. Data for the present study were from the 2021 and 2022 Annual Questionnaires, with 2,411 participants completing the 2021 annual questionnaire, and 2,365 completing annual surveys at both study waves (2021 and 2022). Demographic details for the study sample are included in Table 1.

**Measures**

**Anxiety.** Anxiety symptoms were measured using the Generalized Anxiety Disorder-7 (GAD-7; Spitzer et al., 2006). The GAD-7 is a seven-item measure of the frequency of generalized anxiety disorder (GAD) symptoms, corresponding to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5 [American Psychiatric Association, 2013]) criteria for GAD. Items are rated on a 0 (not at all) to 3 (nearly every day) scale. Total scale scores are summed, with possible scores ranging from 0 to 21. Cut-off scores of 5, 10, and 15 represent mild, moderate, and severe anxiety symptoms, respectively. The GAD-7 has been extensively studied in a variety of populations and settings, with validity evidence supported by positive associations with other self-report measures of anxiety (Plummer et al., 2016). In a sample of trans adults, the GAD-7 showed good internal consistency, with a Cronbach's alpha of .90 (Bell

et al., 2019). In the present study, Cronbach's alpha was .90 in both 2021 and 2022 data.

**Depression.** Depressive symptoms were measured using the Patient Health Questionnaire-9 (PHQ-9 [Kroenke et al., 2001]), which is a nine-item measure of depressive symptom severity that corresponds to diagnostic criteria listed in the DSM-5 (American Psychiatric Association, 2013) from 0 (not at all) to 3 (nearly every day). Total scale scores are summed with a range of 0 to 27; cut points of 5, 10, 15, and 20 represent mild, moderate, moderately severe, and severe levels of depressive symptoms, respectively. The PHQ-9 has been studied extensively across multiple populations and across both clinical and community settings, evidencing strong validity with other self-report measures of depressive symptoms and clinician-guided mental health interviews (Kroenke et al., 2001). In prior research with trans adults, the PHQ-9 demonstrated strong internal consistency, with a Cronbach's alpha of .93 (Bell et al., 2019). In the present study, Cronbach's alpha was .83 and .88 for 2021 and 2022, respectively.

**PTSD Symptoms.** PTSD symptoms were measured using the brief six-item Posttraumatic Stress Disorder (PTSD) Checklist (PCL-6(Lang & Stein, 2005)). Participants reported on the degree to which they have been bothered in the last month by PTSD-related symptoms using a scale from 1 (not at all) to 5 (extremely). Total scale scores are summed, with cut-off scores of 12 or less, 13-16, 17-25, and 26 and above for low, medium, high, and very high risk for meeting diagnostic criteria for PTSD, respectively (Han et al., 2016). The PCL-6 has been found to be correlated with measures of anxiety and depression among TNB adults (Stults et al., 2023) and to have good internal consistency with Cronbach's alphas ranging from .87 (Lacombe-Duncan et al., 2021) to .88 (Stults et al., 2023). Cronbach's alpha in the present study was .83 and .85 in 2021 and 2022, respectively.

**Social Support.** Social support was measured with three scales: the short forms of the

Emotional Support and Social Isolation subscales of the Patient-Reported Outcomes

Measurement Information System (PROMIS [Cella et al., 2010]) and a single-item index of

family support developed in conjunction with researchers and community members with

[masked]. The short-form Emotional Support PROMIS subscale comprises four items that reflect

the perceived availability of emotional support. The short form Social Isolation subscale also

comprises four items that capture an individual's perceived sense of social isolation, which

included social dynamics related to the presence (or lack thereof) of social connections in an

individual's life, which was used in the present study as an operationalization of social

connectedness. Items are rated on a 1 (Never) to 5 (Always) scale with higher scores indicating

greater levels of the construct measured. To score the scale, item responses are summed to

produce a raw score, which is converted to a T-score, per administration guidelines (Cella et al.,

2010). The PROMIS Emotional Support and Social Isolation short-form subscales have shown a

strong correlation with their corresponding long forms and other measures of social health (Cella

et al., 2010). The PROMIS Emotional Support and Social Isolation subscales have shown good

internal consistency with Cronbach's alphas ranging from .95 to .97 (Rung Wu et al., 2023). In

the present study, Cronbach's alpha was .94 for PROMIS Emotional Support and .90 for PROMIS

Social Isolation.

An index of family support was developed for the purposes of this study through

community input about important types of social support to measure among TNB people within

[masked] study. Specifically, participants in the larger longitudinal study [masked], along with

one member of the Participant Advisory Committee, provided input to researchers, who then

generated a list of types of support. These items were, in turn, reviewed by the full Participant

Advisory Committee for additional input and editing before being finalized by researchers and

distributed in the next year's annual surveys. Response options to a question about what forms of

gender-specific support were provided to the participant by family members are listed in Figure 1.

Responses were coded as no (0) or yes (1); higher scores indicate a greater level of support. In the

present study, we used the individual response items as manifest variables to include in the latent

profile analysis. Cronbach's alpha was .83.

**Internalized stigma.** Internalized stigma, one form of proximal stress, was measured

with the Internalized Homophobia Scale (IHS [Herek et al., 2009]). The five-item IHS was

modified to capture the degree to which TNB individuals internalized negative attitudes about

one's gender, in consultation with research and community partners with [masked for review].

Items are rated from 1 (disagree strongly) to 5 (agree strongly) and summed. Higher scores reflect

greater levels of internalized stigma. The gender-modified IHS has been found to show adequate

internal consistency with a Cronbach's alpha of .76 among TNB adults participating in [masked

study] prior to 2021 (Flentje et al., 2021). Cronbach's alpha in the present study was .71 for both

2021 and 2022 data.

**Distal Minority Stress.** Distal minority stress was measured with nine single-item

indicators related to discrimination and victimization experiences encompassing the following:

physical attack, harassment from strangers, sexual assault, job discrimination, housing

discrimination, service discrimination, being denied or given lower quality medical care or

mental health care, or unfair treatment or harassment by the police. These items were developed

with community member feedback through [masked study's] Participant Advisory Committee

(see [masked]). Participants responded Yes (1) or No (0) to each item about experiences in the past year. Items were summed with higher scores indicating a greater number of distal minority stress experiences in the past year.

**Procedure**

This study was approved by [masked] and was not pre-registered. Data from the present study were drawn from TNB adult participants who completed The [masked study's] 2021 and 2022 Annual Questionnaires. Participants were included if they reported their gender as any of the following forced choice gender grouping options: transgender man, transgender woman, nonbinary, or another gender identity. Participants completed all study measures online in the [masked] research platform. Recruitment and retention for [masked] is described in greater depth by [masked for review].

**Analysis**

Data were analyzed with M*plus*, Version 8.10 (Muthén & Muthén, 1998) and SAS software. For the LPA, all missing data were handled using Full Information Maximum Likelihood (FIML) in M*plus*. The LPA was conducted using both continuous (PROMIS subscales) and categorical items (family support) from data collected in Year 1. Categorical variables were coded as 1= yes or 0 = no. LPAs with one through 10 latent profiles were conducted to identify subgroups within the sample, clustered according to commonalities in reported forms of support.

To conduct the LPA, we used 300 sets of random start values with 50 initial stage iterations. We used the following indices of fit (Nylund et al., 2007): Bayesian Information Criterion (BIC), sample size-adjusted BIC (aBIC), Akaike Information Criterion (AIC), and the Lo-Mendell-Rubin Adjusted LRT Test to test the significance of differences between $k$ and $k$-1

classes. Non-significant differences between $k$ and $k$-1 indicate that the model is not improved with $k$ classes. Following the LPA, we tested for concurrent differences between the profiles in mental health outcomes as well as demographic composition using a series of analyses of variance (ANOVA) and chi-square analyses.

We conducted a series of longitudinal SEM analyses in a two-wave cross-lagged panel design with data from 2021 (Year 1) and 2022 (Year 2) using M*plus*. All predictors and outcome variables were autoregressed to control for earlier scores on the same measures, and predictors were cross-lagged to assess the directionality of effect (see Figure 3 for the theorized model. Predictors were allowed to covary. We first tested three separate models to assess relationships among minority stress predictors with each of the outcome variables (anxiety, depression, PTSD symptoms). Next, we conducted nested model comparisons to test whether social support profiles moderated the strength of parameter effects among study variables. The social support profile was entered as a grouping variable to define a multiple groups SEM and estimates for parameters were allowed to vary by group. The MODEL CONSTRAINT command was used to compute z-scores to test the significance of the difference of the same paths between variables by each group (Table 2).

## Results

### Latent Profile Analysis Results

Results from one- to 10-profile LPAs suggested the best fit to the data was a 3-profile solution. Model fit information for all profiles is included in Supplementary Materials. Although AIC, BIC, and aBIC continued to decrease with each profile solution, the size of that decrease began to narrow after the 3-profile solution. Furthermore, the Lo-Mendell-Rubin Adjusted LRT was non-significant in the 4-profile solution, indicating that the 4-class solution did not improve

model fit. As a result, the 3-profile solution was retained. Latent class probabilities averaged between .86 (Profile 2) to .92 (Profile 3), which indicates good reliability of profile assignments in this model. Entropy above .76 is associated with high rates (>90%) of accurate class assignment (Meng-Cheng et al., 2017); entropy in our present study was .77.

**Social Support Profiles.** Mean scores for the two continuous predictors (emotional support, social isolation) and the proportion of participants who endorsed each of the categorical family support variables within each profile are presented in Figures 1 and 2. Profile 1 ("High Support Profile") was the smallest of the profiles with 475 participants (19.7%) who were characterized by the highest levels of family support across all profiles and average levels of emotional support and social isolation. Nearly all participants in the High Support profile reported that family members provided affirmation and validation, including feeling respected, listened to, family members using the correct names and pronouns, supporting gender-affirming medical care, doing their own research related to TNB concerns, and standing up for participants when needed. Forty-nine percent of participants in the High Support profile reported that family had provided financial support, and 41% of participants reported that family members had assisted with participants' efforts to change their legal name or gender. Profile 2 ("Moderate Support Profile") was the largest profile with 982 participants (40.7%) and was characterized by moderately high levels of family support that involved participants feeling respected by family members and family members who used participants' correct names and pronouns. However, 42% of participants in the Moderate Support profile reported that they felt listened to, 31% reported having family who supported gender-affirming medical care, 36% reported having family who stood up for them, and only 26% reported having family members who did their own

research related to TNB concerns. Participants in the Moderate Support profile also had little

support related to financial help from family (10%) or assistance with legal name or gender

change (5%). Finally, participants in the Moderate Support profile reported average levels of

emotional support and social isolation (less than those in the High Support profile). Profile 3

("Low Support Profile") was composed of 954 participants (39.6%) who were characterized by

very low levels of family support across all variables. Only 12% of participants in the Low

Support Profile reported feeling respected by family members with all other forms of support

being endorsed by 7% or fewer participants. Participants in the Low Support profile also had the

lowest levels of emotional support and greatest social isolation in the sample.

Significant differences emerged between the profiles on internalized stigma, ($F$ (2, 2261)

= 16.55, $p < .001$), depression ($F$ (2, 2288) = 9.51, $p < .001$), and PTSD symptoms ($F$ (2, 2291) =

11.86, $p < .001$) but not anxiety symptoms ($F$ (2, 2288) = 2.73, $p = .07$). The Low Support profile

($M = 1.90$, $SD = .79$) had significantly higher scores on internalized stigma than those in the High

($M = 1.71$, $SD = .78$) and Moderate Support profiles ($M = 1.71$, $SD = .73$). Regarding depression,

the Low Support profile had significantly higher depression symptoms ($M = 10.44$, $SD = 6.40$)

than the High ($M = 9.17$, $SD = 6.22$) and Moderate ($M = 9.30$, $SD = 6.32$) profiles. Regarding

PTSD symptoms, a similar pattern emerged with the Low Support profile ($M = 16.09$, $SD =$

5.23), which had significantly higher scores on PTSD symptoms compared to the High Support

($M = 14.38$, $SD = 5.38$) and Moderate Support profiles ($M = 15.20$, $SD = 5.30$).

**Demographic Differences Among Social Support Profiles.** Chi-square tests were

conducted to test for significant differences among the latent profiles in participant demographics

(see Table 1). Significant differences at the $p < .05$ level emerged across most demographic

variables tested. The High Support profile was composed of a larger proportion of trans men and fewer nonbinary individuals than those in the Moderate and Low Support profiles. The Low Support profile comprised the most nonbinary participants. Regarding sexual orientation, the High Support profile contained the lowest relative proportion of asexual, demisexual, or gray-ace individuals and the greatest proportion of individuals who identified as queer and straight or heterosexual. The Low Support profile had the greatest proportion of 'asexual, demisexual, or gray-ace,' 'bisexual or pansexual,' and gay or lesbian participants and the lowest proportion of queer-identified participants compared to those in the High or Moderate Support profiles. Participants in the High Support profile tended to be younger in age and lower in income than those in Moderate and Low Support profiles, although greater variation across age groups and income levels was observed across all three profiles than in other sociodemographic categories. Finally, regarding race and ethnicity, no significant differences between support profiles were observed for the proportion of participants who selected Asian, American Indian, Black, Hawaiian or Pacific Islander, Latinx, Middle Eastern, more than one race, or no race. However, there were significant differences between profile membership in the proportion of participants who selected only White or White along with any other race or ethnicity. The High Support profile contained the highest proportion of individuals who selected White only or White along with any other race or ethnicity. Although a majority of participants, the Low Support profile contained the smallest proportion of White participants compared to those in the High and Moderate Support profiles.

**Two-Wave Minority Stress Models**

The data fit all three SEM models well. For anxiety, model fit was $X^2 (3) = 9.49$, $p = .02$, CFI = .998, RMSEA = .02 (90% CI: .01, .04), SRMR = .01. For depression symptoms, model fit

was $X^2 (3) = 9.58$, $p = .02$, CFI = .998, RMSEA = .02 (90% CI: .01, .04), SRMR = .01. Finally,

for PTSD symptoms, model fit was $X^2 (3) = 9.55$, $p = .02$, CFI = .998, RMSEA = .02 (90%

CI: .01, .04), SRMR = .01. Regarding the main outcome of interest (Year 2 anxiety, depression,

or PTSD symptoms), a large amount of variance was explained by indicators in the models which

included prior year symptoms was 54% for anxiety symptoms, 56% for depression symptoms,

and 57% for PTSD symptoms.

In the anxiety symptom model, distal stress and internalized stigma in Year 1 and distal

stress and internalized stigma in Year 2 positively predicted anxiety in Year 2, in line with our

hypotheses. Greater anxiety symptoms in Year 1 were also significantly associated with higher

internalized stigma and distal stress in Year 2. In the depression symptoms model, distal stress

and internalized stigma in Year 1 and distal stress and internalized stigma in Year 2 positively

predicted depression symptoms in Year 2, also in line with our hypotheses. Greater depression

symptoms in Year 1 were also associated with higher distal stress and internalized stigma in Year

2. Finally, in the PTSD symptoms model, higher distal stress and internalized stigma in Year 1

and distal stress in Year 2 were associated with greater PTSD symptoms in Year 2. However, in

contrast to the anxiety and depression symptoms models, PTSD symptoms in Year 1 were only

associated with distal stress but not internalized stigma in Year 2.

Next, we conducted nested model comparisons to test for model differences between the

three social support profiles for each of the outcome models. Across the three models, our

hypotheses that belonging to a profile marked by higher levels of social support would weaken the

association of minority stressors with mental health were not supported. In the depression

symptoms model, the path between internalized stigma at Year 1 and depression at Year 2 was

significantly different between the High Support Profile $(\beta = .07$, SE = .04) and the Moderate

Support profile *(β = -.08, SE = .04)*. Notably, only in the Moderate Support profile was the association of higher internalized stigma in Year 1 significantly correlated with higher depression symptoms and scores in Year 2. The models explained between 51% (High Support) and 58% (Moderate Support) of the variance in depression in Year 2, a large effect. Two differences emerged in the PTSD symptoms model. First, the path from distal stress in Year 1 and PTSD symptoms in Year 2 was positive for participants in the Low Support profile *(β = .07, SE = .04)*, such that higher distal stress scores in Year 1 were associated with higher PTSD symptoms in Year 2, compared to participants in the High Support profile where the relation between distal stress and PTSD symptoms was not significant *(β = -.06, SE = .05)*. Second, the path in the reverse direction of distal stress in Year 2 with PTSD symptoms at Year 1 was significantly different between the High and Low Support profiles. Specifically, the path from distal stress in Year 2 with PTSD symptoms in Year 1 was positive for those in the Low Support profile *(β = .14, SE = .03)*, such that higher PTSD symptoms in Year 1 were associated with higher distal stress scores in Year 2. This path was not significant for those in the High Support profile *(β = .01, SE = .04)*. The models explained between 53% (Moderate Support) and 58% (both Low and High Support profiles) in PTSD symptoms at Year 2, a large effect.

## Discussion

Results from this study contribute to our understanding of social support for TNB adults. This study builds on the extant literature by investigating variation in family gender-related support and how that may coalesce with the general perceived availability of social support and social connectedness for TNB people. We conducted an LPA and identified three distinct social support profiles (low, moderate, and high levels). Variation among profiles yielded some unique insights into the types of support for TNB people, particularly regarding gender-related support

from family. For participants in the Moderate and High Support profiles, a greater proportion

reported experiencing various forms of gender-related emotional support. More variation was

observed, however, among items related to instrumental and informational support, such as

assistance with changing name and gender identity documents, financial assistance with gender-

affirming care, and researching how to better support the participant. Individuals in the Low

Support profile (~40% of the total sample), however, reported paltry support from family across

emotional, instrumental, and informational support dimensions, along with lower levels of

general emotional support and social connectedness when compared to the Moderate and High

Support profiles. Within the Low Support profile, very few people (12%) reported that they had

ever been told by family that they were respected and/or supported. Only 1-4% of participants

reported family members used the correct pronouns, stood up to others for them, did research to

understand how to better support the participant, or provided any financial support for gender

transition. There were zero participants in this group who received any assistance from family

with changing their name or gender on identity documents.

Regarding mental health, participants in the Low Support profile reported significantly

higher scores on internalized stigma, depression, and PTSD symptoms than participants in the

Moderate or High Support profiles. There were no differences among groups on levels of anxiety

or exposure to distal stress. That no differences between profiles emerged related to anxiety was

surprising given that prior research has found negative associations of social support with anxiety

(Budge et al., 2013; Pflum et al., 2015). However, it is possible that with how this study

operationalized social support along multiple dimensions as well as varying timelines (i.e.,

current availability of emotional support *and* current and past experiences of family support

related to gender transition), social support's association with anxiety may hold a different effect

than when it is measured only as current availability of emotional support as has been the case in prior research.

For participants across all three profiles, mean levels of anxiety symptoms fell within the range of scores clinically indicative of mild anxiety. Regarding depression, mean levels fell within ranges clinically indicative of mild (Moderate and High Support profiles) and moderate depression (Low Support profile). Finally, mean levels of PTSD symptoms across all three Profiles fell within a range clinically indicative of medium risk for PTSD. While the strength of the paths among minority stress and mental health outcomes were largely not significantly different across profiles, two significant differences emerged for those in the Low Support profile compared to participants in the High Support profile. The relations of distal stress in Year 1 with PTSD symptoms in Year 2 as well as a reverse direction relationship - PTSD symptoms in Year 1 with distal stress in Year 2 - was positive for the Low Support profile and non-significant for High Support profile. These findings suggest that, for individuals with high levels of support, social support buffered the adverse effects of distal stress with PTSD symptoms. However, for individuals with low social support, not only were distal stress experiences in Year 1 associated with PTSD symptoms in Year 2 as expected, but PTSD symptoms in Year 1 were associated with distal stress in Year 2. With no differences in distal stress exposure, this reciprocal relationship suggests that for participants with low levels of support, PTSD symptoms may strengthen the perception or awareness of distal stress over time and exacerbate mental health concerns.

These findings highlight the importance of considering the multidimensional nature of social support, such as the source and type of support received (general versus gender-specific; emotional, instrumental, informational support), to determine its effects more effectively on mental health and well-being for TNB people. Past research has tended to investigate only one

dimension at a time, usually focusing on general emotional support (Budge et al., 2013; Puckett et al., 2019; Tebbe & Moradi, 2016; Trujillo et al., 2017). Although emotional support is important given the robust evidence demonstrating associations with mental health and well-being, our study helps to illustrate how measuring multiple dimensions of social support within a study may yield nuanced understandings of what constitutes social support, what its effects may be, and who may benefit most from different types of social support. Furthermore, with the sociodemographic differences that emerged among the social support profiles, these findings raise the possibility that decreased availability of social support may be another potential mechanism by which identity-related marginalization may contribute to adverse mental health; exacerbating risk for worse mental health by lessening the availability of social support as an essential health promotive factor.

Contrary to our hypotheses, when we tested profile membership based on social support experiences measured in Year 1 as a moderating variable in the association of minority stress with mental health over time, we largely found no differences in the strengths of the paths from minority stress to anxiety, depression, and PTSD symptoms in Year 2 for those in the Low, Moderate, and High Support profiles with a few exceptions. While a strength of this study was its inclusion of an index of family support that included specific gender-related emotional, instrumental, and informational forms of support, it may have been too broad in its operationalization and timing to capture stress-buffering effects. While "coming out" and gender transition may itself be a stressful experience for many and a time of heightened risk for minority stress (Rood et al., 2016), we did not capture when such family support experiences occurred. It is also possible that for participants in the Low and Moderate Support Profiles, who also tended to be older than participants in the High Support Profiles, gender-related changes may have

occurred at a time when fewer resources, education, and knowledge were available for family members in how to support TNB children, siblings, or parents, and lower levels of support may be reflective of the broader societal attitudes towards TNB individuals in the past. Therefore, future research aiming to investigate the degree to which family support may help to buffer the adverse effects of minority stress can strive to capture support directly in response to minority stress and how that affects mental health over time.

**Clinical Implications.** There are several key implications from this study's findings for mental health providers who work with TNB clients. First, with the Low Support profile reporting significantly higher scores on depression and PTSD symptoms, some level of social support availability is associated with better psychological outcomes. Providers should attend to their clients' social support needs and work to understand what support resources TNB individuals have available to them. It may be helpful to ask about forms of social support other than emotional support that are available, including the extent to which they may have someone they can turn to in a crisis or for financial or logistical help. Assessing where TNB individuals gather information related to gender transition may help providers understand whether clients need additional local resources or information about gender transition processes. Assessing these needs may yield clinically relevant information about access to formalized support, care, quality, and strength of connections to the larger TNB community. While these support networks can provide numerous benefits to TNB individuals, study findings suggest that they may not be sufficient for buffering the adverse harms of minority stress over time. As a result, providers should help clients process minority stress experiences directly and to develop additional effective coping strategies for minimizing distress and promoting positive psychological functioning.

Much of the literature to date investigating family support has centered support from caregivers and parents; however, for older TNB adults, support from spouses and children may be more personally salient (e.g., Hughes, 2016). Providers should assess clients' family structures and identify through what relationships clients need and desire support. Providers can talk with their clients about their experiences with family members regarding various types of support over time and about gender transition. In our study, almost 40% of the sample reported very low to no support from family members related to their gender. While family may be a critical source of support for some, it may represent an area of pain and hurt for others. Providers can use their clinical judgment to determine whether it may be helpful to address painful experiences of lack of support from family members to move towards healing and in alignment with individual goals.

**Limitations and Future Directions.** Several limitations should be noted in the present study. First, although the index of family gender-related support was developed with input from the community, this measure has not been validated. Because its items were used as single indicators within the LPA models, this presents fewer concerns regarding overall scale reliability or structural validity. Future research could psychometrically evaluate this measure as a predictive variable in regression-based analysis. Second, although we had a large sample size appropriate for drawing conclusions, the extent to which results are generalizable to the entire adult TNB population is limited by our study's use of convenience sampling. Because participants were recruited through [masked study] – an ongoing national research study with explicit aims to produce knowledge to improve health for LGBTQIA+ people – recruitment strategies for this study may have been unable to reach individuals with higher levels of internalized stigma related to their gender and/or sexuality. Finally, this study's sample included a higher proportion of

White participants than the general US population. Therefore, future research should aim for more demographically representative and/or balanced samples.

Overall, findings from the present study contribute to our understanding of the variation in family support experiences that exists within TNB communities and how that variability may be associated with mental health outcomes. Emotional support may be more readily available to TNB individuals than other essential forms of support, such as instrumental and informational support. Future research could continue to investigate the specific effects received social support may have across different contexts and from different sources.

**References**

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders: DSM-5*. American Psychiatric Association.

Barr, S. M., Budge, S. L., & Adelson, J. L. (2016). Transgender community belongingness as a mediator between strength of transgender identity and well-being. *Journal of Counseling Psychology*, *63*(1), 87–97. https://doi.org/10.1037/cou0000127

Bell, K., Rieger, E., & Hirsch, J. K. (2019). Eating disorder symptoms and proneness in gay men, lesbian women, and transgender and gender non-conforming adults: Comparative levels and a proposed mediational model. *Frontiers in Psychology*, *9*. https://www.frontiersin.org/articles/10.3389/fpsyg.2018.02692

Brooks, V. (1981). *Minority stress and lesbian women*. Free Press.

Budge, S. L., Adelson, J. L., & Howard, K. A. S. (2013). Anxiety and depression in transgender individuals: The roles of transition status, loss, social support, and coping. *Journal of Consulting and Clinical Psychology*, *81*(3), 545–557. https://doi.org/10.1037/a0031774

Budge, S. L., Rossman, H. K., & Howard, K. A. S. (2014). Coping and psychological distress among genderqueer individuals: The moderating effect of social support. *Journal of LGBT Issues in Counseling*, *8*(1), 95–117. https://doi.org/10.1080/15538605.2014.853641

Carter, S. P., Allred, K. M., Tucker, R. P., Simpson, T. L., Shipherd, J. C., & Lehavot, K. (2019). Discrimination and suicidal ideation among transgender veterans: The role of social support and connection. *LGBT Health*, *6*(2), 43–50. https://doi.org/10.1089/lgbt.2018.0239

Cella, D., Riley, W., Stone, A., Rothrock, N., Reeve, B., Yount, S., Amtmann, D., Bode, R.,

Buysse, D., Choi, S., Cook, K., Devellis, R., DeWalt, D., Fries, J. F., Gershon, R., Hahn,

E. A., Lai, J.-S., Pilkonis, P., Revicki, D., … PROMIS Cooperative Group. (2010). The

Patient-Reported Outcomes Measurement Information System (PROMIS) developed and

tested its first wave of adult self-reported health outcome item banks: 2005-2008. *Journal

of Clinical Epidemiology*, *63*(11), 1179–1194.

https://doi.org/10.1016/j.jclinepi.2010.04.011

Cohen, S., & Syme, S. L. (1985). Issues in the study and application of social support. In *Social

support and health* (pp. 3–22). Academic Press.

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis.

*Psychological Bulletin*, *98*(2), 310–357.

Durwood, L., Eisner, L., Fladeboe, K., Ji, C. (Gabriella), Barney, S., McLaughlin, K. A., &

Olson, K. R. (2021). Social support and internalizing psychopathology in transgender

youth. *Journal of Youth and Adolescence*, *50*(5), 841–854.

https://doi.org/10.1007/s10964-020-01391-y

Feeney, B. C., & Collins, N. L. (2015). A new look at social support: A theoretical perspective on

thriving through relationships. *Personality and Social Psychology Review*, *19*(2), 113–

147. https://doi.org/10.1177/1088868314544222

Flentje, A., Clark, K. D., Cicero, E., Capriotti, M. R., Lubensky, M. E., Sauceda, J., Neilands, T.

B., Lunn, M. R., & Obedin-Maliver, J. (2021). Minority stress, structural stigma, and

physical health among sexual and gender minority individuals: Examining the relative

strength of the relationships. *Annals of Behavioral Medicine: A Publication of the Society

of Behavioral Medicine*, *56*(6), 573–591. https://doi.org/10.1093/abm/kaab051

Fredriksen-Goldsen, K. I., Cook-Daniels, L., Kim, H.-J., Erosheva, E. A., Emlet, C. A., Hoy-

Ellis, C. P., Goldsen, J., & Muraco, A. (2014). Physical and Mental Health of Transgender

Older Adults: An At-Risk and Underserved Population. *The Gerontologist*, *54*(3), 488–

500. https://doi.org/10.1093/geront/gnt021

Han, B., Wong, E. C., Mao, Z., Meredith, L. S., Cassells, A., & Tobin, J. N. (2016). Validation of

a brief PTSD screener for underserved patients in federally qualified health centers.

*General Hospital Psychiatry*, *38*, 84–88.

https://doi.org/10.1016/j.genhosppsych.2015.07.009

Heaney, C. A., & Israel, B. A. (2008). Social networks and social support. In *Health behavior

and health education: Theory, research, and practice, 4th ed* (pp. 189–210). Jossey-Bass.

Herek, G. M., Gillis, J. R., & Cogan, J. C. (2009). Internalized stigma among sexual minority

adults: Insights from a social psychological perspective. *Journal of Counseling

Psychology*, *56*(1), 32–43. https://doi.org/10.1037/a0014672

Hughes, M. (2016). Loneliness and social support among lesbian, gay, bisexual, transgender and

intersex people aged 50 and over. *Ageing & Society*, *36*(9), 1961–1981.

https://doi.org/10.1017/S0144686X1500080X

Johnson, E. E. H., Wilder, S. M. J., Andersen, C. V. S., Horvath, S. A., Kolp, H. M., Gidycz, C.

A., & Shorey, R. C. (2021). Trauma and alcohol use among transgender and gender

diverse women: An examination of the stress-buffering hypothesis of social support. *The

Journal of Primary Prevention*, *42*(6), 567–581. https://doi.org/10.1007/s10935-021-

00646-z

Kroenke, K., & Spitzer, R. L. (2002). The PHQ-9: A New Depression Diagnostic and Severity

Measure. *Psychiatric Annals*, *32*(9), 509–515. https://doi.org/10.3928/0048-5713-

20020901-06

Kroenke, K., Spitzer, R. L., & Williams, J. B. W. (2001). The PHQ-9. *Journal of General

Internal Medicine*, *16*(9), 606–613. https://doi.org/10.1046/j.1525-

1497.2001.016009606.x

Lacombe-Duncan, A., Warren, L., Kay, E. S., Persad, Y., Soor, J., Kia, H., Underhill, A., Logie,

C. H., Kazemi, M., Kaida, A., de Pokomandy, A., & Loutfy, M. (2021). Mental health

among transgender women living with HIV in Canada: Findings from a national

community-based research study. *AIDS Care*, *33*(2), 192–200.

https://doi.org/10.1080/09540121.2020.1737640

Lang, A. J., & Stein, M. B. (2005). An abbreviated PTSD checklist for use as a screening

instrument in primary care. *Behaviour Research and Therapy*, *43*(5), 585–594.

https://doi.org/10.1016/j.brat.2004.04.005

Lewis, T. O. G., Barreto, M., & Doyle, D. M. (2023). Stigma, identity and support in social

relationships of transgender people throughout transition: A qualitative analysis of

multiple perspectives. *Journal of Social Issues*, *79*(1), 108–128.

https://doi.org/10.1111/josi.12521

Lombardi, E. L. (1999). Integration Within a Transgender Social Network and Its Effect upon

Members' Socialand Political Activity. *Journal of Homosexuality*, *37*(1), 109–126.

https://doi.org/10.1300/J082v37n01_08

McConnell, E. A., Birkett, M., & Mustanski, B. (2016). Families matter: Social support and

mental health trajectories among lesbian, gay, bisexual, and transgender youth. *Journal of*

*Adolescent Health*, *59*(6), 674–680. https://doi.org/10.1016/j.jadohealth.2016.07.026

McLemore, K. A. (2018). A minority stress perspective on transgender individuals' experiences

with misgendering. *Stigma and Health*, *3*(1), 53–64. https://doi.org/10.1037/sah0000070

Medico, D., Pullen Sansfaçon, A., Zufferey, A., Galantino, G., Bosom, M., & Suerich-Gulick, F.

(2020). Pathways to gender affirmation in trans youth: A qualitative and participative

study with youth and their parents. *Clinical Child Psychology and Psychiatry*, *25*(4),

1002–1014. https://doi.org/10.1177/1359104520938427

Meng-Cheng, W., Qiaowen, D., Xiangyang, B. I., Haosheng, Y. E., & Wendeng, Y. (2017).

Performance of the entropy as an index of classification accuracy in latent profile analysis:

A Monte Carlo simulation study. *Acta Psychologica Sinica*, *49*(11), 1473. https://doi.org/

10.3724/SP.J.1041.2017.01473

Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual

populations: Conceptual issues and research evidence. *Psychological Bulletin*, *129*(5),

674–697. https://doi.org/10.1037/0033-2909.129.5.674

Muthén, L. K., & Muthén, B. O. (1998). *Mplus user's guide (Version 7)*. Author.

Nylund, K., Asparouhov, T., & Muthen, B. (2007). Deciding on the number of classes in latent

class analysis and growth mixture modeling: A Monte Carlo simulation study. *Structural*

*Equation Modeling*, *14*, 535–569.

Pflum, S. R., Testa, R. J., Balsam, K. F., Goldblum, P. B., & Bongar, B. (2015). Social support,

trans community connectedness, and mental health symptoms among transgender and

gender nonconforming adults. *Psychology of Sexual Orientation and Gender Diversity*, *2*(3), 281–286. https://doi.org/10.1037/sgd0000122

Plummer, F., Manea, L., Trepel, D., & McMillan, D. (2016). Screening for anxiety disorders with the GAD-7 and GAD-2: A systematic review and diagnostic metaanalysis. *General Hospital Psychiatry*, *39*, 24–31. https://doi.org/10.1016/j.genhosppsych.2015.11.005

Puckett, J. A., Matsuno, E., Dyar, C., Mustanski, B., & Newcomb, M. E. (2019). Mental health and resilience in transgender individuals: What type of support makes a difference? *Journal of Family Psychology*, *33*(8), 954–964. https://doi.org/10.1037/fam0000561

Rimmer, S. E., Cohn, T. J., Hastings, S. L., Steele, J. C., & Woods, C. (2022). Does social support moderate the relationship between gender minority stress and suicide within a sample of transgender and gender diverse people? *Journal of Gay & Lesbian Mental Health*, *0*(0), 1–20. https://doi.org/10.1080/19359705.2021.1997855

Rood, B. A., Reisner, S. L., Surace, F. I., Puckett, J. A., Maroney, M. R., & Pantalone, D. W. (2016). Expecting Rejection: Understanding the Minority Stress Experiences of Transgender and Gender-Nonconforming Individuals. *Transgender Health*, *1*(1), 151–164. https://doi.org/10.1089/trgh.2016.0012

Rung Wu, J., Chen, X., Iwanaga, K., Bezyak, J., Rumrill, S., Lee, D., & Chan, F. (2023). Psychometric Validation of the PROMIS Social Support Scale in a Sample of Individuals With Chronic Health Conditions and Disabilities: A Factor Analytic Study. *Rehabilitation Counseling Bulletin*, 00343552231199243. https://doi.org/10.1177/00343552231199243

Shah, T. N., Parodi, K. B., Holt, M. K., Green, J. G., Katz-Wise, S. L., Kraus, A. D., Kim, G. S., & Ji, Y. (2022). A Qualitative Exploration of How Transgender and Non-binary

Adolescents Define and Identify Supports. *Journal of Adolescent Research*,

07435584221123123. https://doi.org/10.1177/07435584221123123

Sherman, A. D. F., Clark, K. D., Robinson, K., Noorani, T., & Poteat, T. (2020). Trans*

community connection, health, and wellbeing: A systematic review. *LGBT Health*, *7*(1),

1–14. https://doi.org/10.1089/lgbt.2019.0014

Sherman, A. D. F., Poteat, T. C., Budhathoki, C., Kelly, U., Clark, K. D., & Campbell, J. C.

(2020). Association of depression and post-traumatic stress with polyvictimization and

emotional transgender and gender diverse community connection among Black and

Latinx transgender women. *LGBT Health*, *7*(7), 358–366.

https://doi.org/10.1089/lgbt.2019.0336

Spitzer, R. L., Kroenke, K., Williams, J. B. W., & Löwe, B. (2006). A brief measure for assessing

generalized anxiety disorder: The GAD-7. *Archives of Internal Medicine*, *166*(10), 1092–

1097. https://doi.org/10.1001/archinte.166.10.1092

Stults, C. B., Gao, S., Brandt, S. A., Taber, J. L., Lynn, S. G., Kaczetow, W., Lee, G., Cruise, A.,

& Krause, K. D. (2023). Intimate Partner Violence and Mental Health Among

Transgender and Gender Diverse Young Adults. *Journal of Family Violence*.

https://doi.org/10.1007/s10896-023-00579-7

Tardy, C. H. (1985). Social support measurement. *American Journal of Community Psychology*,

*13*(2), 187–202. https://doi.org/10.1007/BF00905728

Tebbe, E. A., & Moradi, B. (2016). Suicide risk in trans populations: An application of minority

stress theory. *Journal of Counseling Psychology*, *63*(5), 520–533. https://doi.org/10.1037/

cou0000152

Testa, R. J., Habarth, J., Peta, J., Balsam, K., & Bockting, W. (2015). Development of the Gender

Minority Stress and Resilience Measure. *Psychology of Sexual Orientation and Gender

Diversity*, *2*(1), 65–77. https://doi.org/10.1037/sgd0000081

Trujillo, M. A., Perrin, P. B., Sutter, M., Tabaac, A., & Benotsch, E. G. (2017). The buffering role

of social support on the associations among discrimination, mental health, and suicidality

in a transgender sample. *International Journal of Transgenderism*, *18*(1), 39–52.

https://doi.org/10.1080/15532739.2016.1247405

Weinhardt, L. S., Xie, H., Wesp, L. M., Murray, J. R., Apchemengich, I., Kioko, D., Weinhardt,

C. B., & Cook-Daniels, L. (2019). The Role of Family, Friend, and Significant Other

Support in Well-Being Among Transgender and Non-Binary Youth. *Journal of GLBT

Family Studies*, *15*(4), 311–325. https://doi.org/10.1080/1550428X.2018.1522606

Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The Multidimensional Scale

of Perceived Social Support. *Journal of Personality Assessment*, *52*(1), 30–41.

https://doi.org/10.1207/s15327752jpa5201_2

Figure 1. *LPA Social Support Profile Scores (categorical)*



**Family Support for Gender (categorical)**
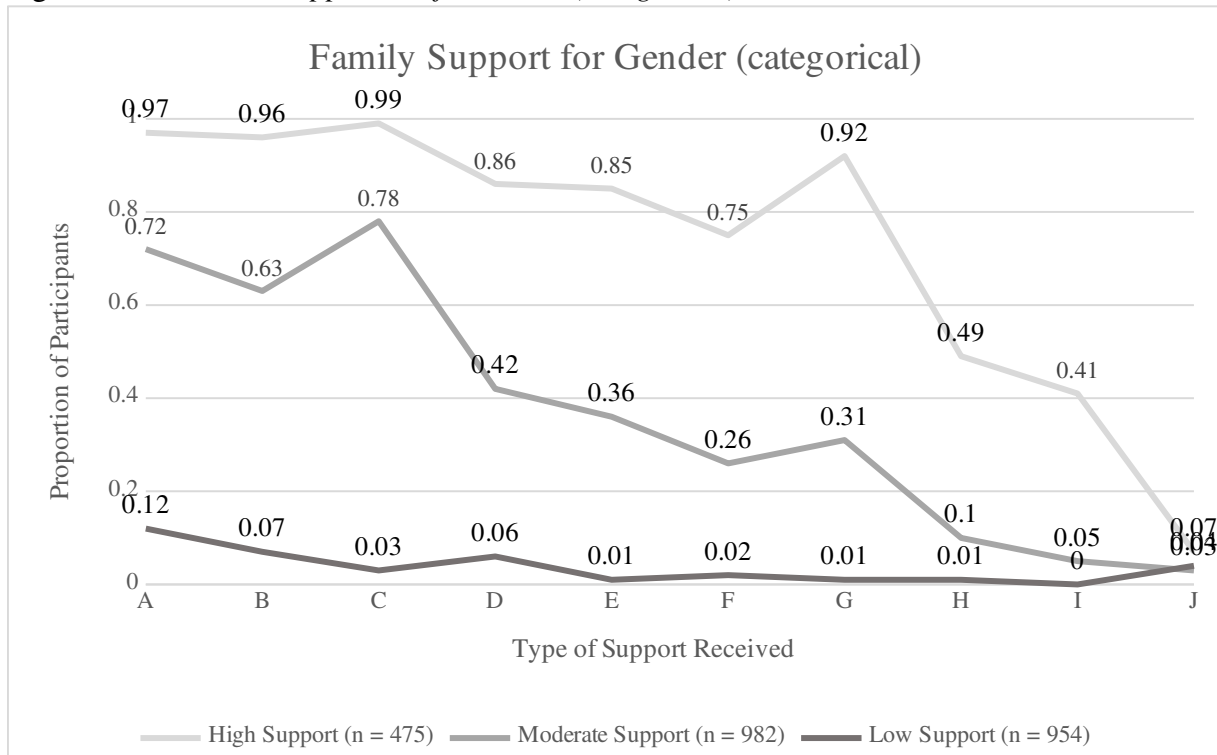
*Note*: A = Told you that they respect and/or support you; B = Used your preferred name even if it was not your legal name; C = Used your correct pronouns, D = Listened to me when I had difficulties, E = Stood up to you with family, friends, or others, F = Did research to learn how to best support you; G = Supported my gender-affirming health care (other than financially), H = Provided financial support to help with any part of your gender transition; I = Helped you change your name and/or gender on your ID; J = Supported you in another way not listed above.

Figure 2. *LPA Social Support Profile Scores (continuous)*
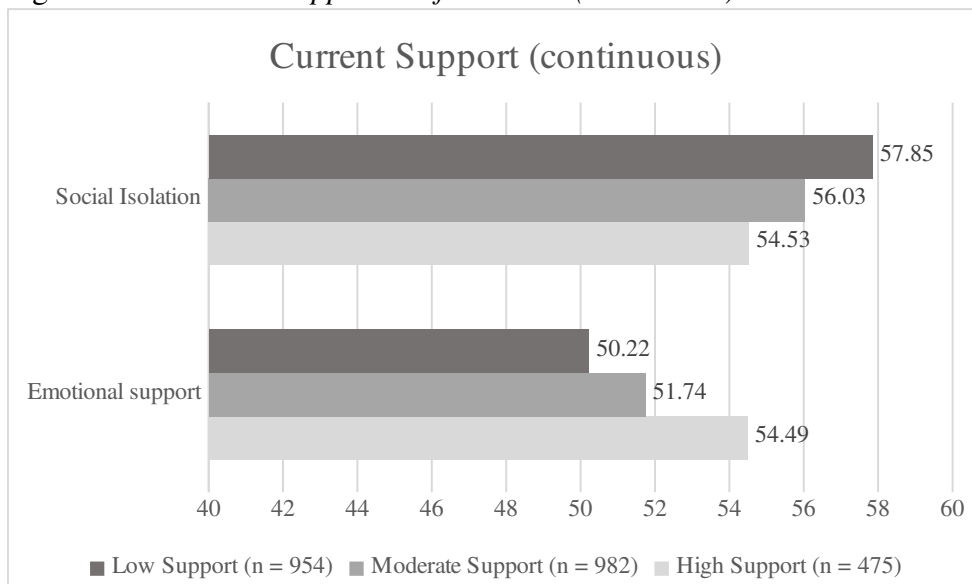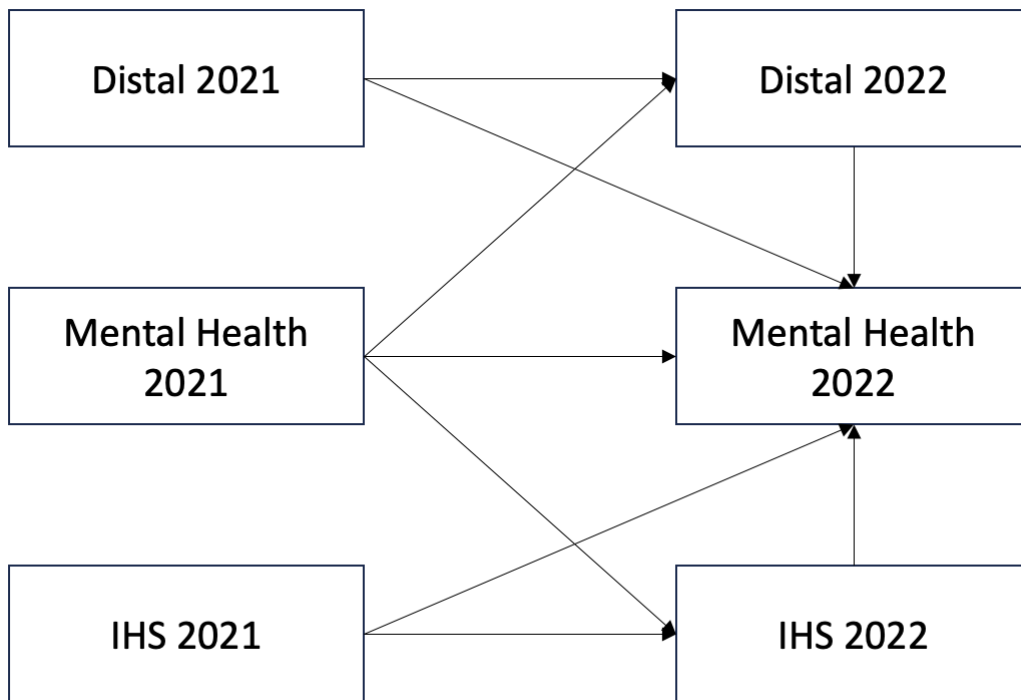


**Current Support (continuous)**

Figure 3. *Theorized Model*



Note: Mental Health in this model depicts depression, anxiety, and PTSD symptoms. IHS = Internalized Homophobia Scale (adapted for internalized transphobia; Herek et al., 2009)

Table 1. *Demographic Characteristics of Social Support Profiles*

| | High Support (n = 475) n (%) | Moderate Support (n = 982) n (%) | Low Support (n = 954) n (%) | Total sample (N = 2,411) | Chi-square | Probability |
|---|---|---|---|---|---|---|
| **Age group** | | | | | $X^2 (6) = 15.34$ | **p = .02** |
| 18-30 | 284 (59.8) | 491 (50.5) | 496 (52.2) | 1271 (53.0) | | |
| 31-45 | 142 (29.9) | 335 (34.8) | 302 (31.8) | 779 (32.5) | | |
| 46-60 | 30 (6.3) | 93 (9.6) | 97 (10.2) | 220 (9.2) | | |
| > 60 | 19 (4.0) | 53 (5.5) | 56 (5.9) | 128 (5.3) | | |
| **Income** | | | | | $X^2 (6) = 17.02$ | **p < .01** |
| ≤ $20,000 | 199 (42.2) | 363 (38.0) | 420 (44.5) | 982 (41.1) | | |
| $20,001 - $40,000 | 115 (24.4) | 219 (22.4) | 203 (21.5) | 537 (22.5) | | |
| $40,001 - $60,000 | 63 (13.4) | 171 (17.5) | 152 (16.1) | 386 (16.1) | | |
| ≥ $60,001 | 95 (20.1) | 223 (22.9) | 168 (17.8) | 489 (20.3) | | |
| **Gender Identity** | | | | | $X^2 (6) = 239.90$ | **p < .0001** |
| Nonbinary | 146 (30.7) | 514 (52.3) | 626 (65.6) | 1286 (53.3) | | |
| Transgender man | 229 (48.2) | 268 (27.3) | 129 (13.5) | 689 (26.0) | | |
| Transgender woman | 75 (15.8) | 126 (12.8) | 99 (10.4) | 300 (12.4) | | |
| Another gender identity | 25 (5.3) | 74 (7.5) | 100 (10.5) | 199 (8.3) | | |
| **Sexual Orientation** | | | | | $X^2 (10) = 21.23$ | **p = .02** |
| Asexual/Demisexual/Gray-Ace | 40 (8.4) | 123 (12.5) | 138 (14.8) | 301 (12.5) | | |
| Bisexual/Pansexual | 133 (28.0) | 278 (28.3) | 278 (29.1) | 689 (28.6) | | |
| Gay/Lesbian | 83 (17.5) | 169 (17.2) | 176 (18.6) | 428 (17.8) | | |
| Queer | 198 (41.7) | 381 (38.8) | 338 (35.4) | 917 (37.0) | | |
| Straight/Heterosexual | 19 (4.0) | 25 (2.6) | 16 (1.7) | 60 (2.5) | | |
| Another sexual orientation | 2 (.4) | 6 (.6) | 8 (.8) | 16 (.7) | | |
| **Sex Assigned at Birth** | | | | | $X^2 (2) = .31$ | **p = .86** |
| Male | 99 (20.9) | 193 (19.7) | 193 (20.4) | 485 (20.2) | | |
| Female | 375 (79.1) | 787 (80.3) | 755 (79.6) | 1917 (79.8) | | |
| **Race and Ethnicity**[a] | | | | | | |
| American Indian (yes) | 16 (3.4) | 34 (3.5) | 49 (5.2) | 99 | $X^2 (2) = 4.29$ | p = .12 |
| Asian (yes) | 20 (4.2) | 48 (4.9) | 61 (6.4) | 129 | $X^2 (2) = 3.71$ | p = .16 |
| Black (yes) | 10 (2.1) | 34 (3.5) | 43 (4.5) | 87 | $X^2 (2) = 3.71$ | p = .16 |
| Hawaiian/Pacific Islander (yes) | 1 (.2) | 3 (.3) | 2 (.2) | 6 | $X^2 (2) = .21$ | p = .90 |
| Latine (yes) | 29 (6.1) | 54 (5.5) | 58 (6.1) | 141 | $X^2 (2) = .38$ | p = .83 |
| Middle Eastern (yes) | 12 (2.5) | 14 (1.4) | 19 (2.0) | 45 | $X^2 (2) = 2.27$ | p = .32 |
| White (yes) | 451 (95.2) | 918 (93.5) | 850 (89.3) | 2219 | $X^2 (2) = 19.10$ | **p < .001** |
| White *only* (yes) | 393 (82.9) | 804 (81.9) | 740 (77.7) | 1937 | $X^2 (2) = 7.56$ | **p = .02** |

| | | | | | | |
|---|---|---|---|---|---|---|
| More than one race | 64 (13.5) | 120 (12.2) | 122 (12.8) | 306 | $X^2$ (2) = .49 | $p$ = .79 |
| No race | 9 (1.90) | 19 (1.93) | 19 (2.00) | 47 | $X^2$ (2) = .02 | $p$ = .99 |

*Note*: **bold** indicates significance at $p$ < .05. [a]Participants were able to select all race and ethnicity categories that applied, so percentages for each

category are not provided.

Table 2. *Minority Stress Model Parameters*

| Parameter | All participants | Profile 1 (high social support) | Profile 2 (moderate social support) | Profile 3 (low social support) |
|---|---|---|---|---|
| | $\beta$ (SE) | $\beta$ (SE) | $\beta$ (SE) | $\beta$ (SE) |
| **Anxiety Symptoms (GAD) Model** | | | | |
| GAD 2021 -> GAD 2022 | .69 (.01)** | .70 (.03)** | .72 (.02)** | .65 (.02)** |
| Distal 2021 -> GAD 2022 | .04 (.02) | .09 (.05) | .03 (.03) | .03 (.04) |
| Distal 2022 -> GAD 2022 | .07 (.02)** | -.01 (.05) | .06 (.03) | .10 (.04)* |
| IHS 2021 -> GAD 2022 | -.01 (.03) | <.01 (.06) | -.07 (.04) | .04 (.04) |
| IHS 2022 -> GAD 2022 | .06 (.03)* | .03 (.06) | .07 (.04) | .02 (.04) |
| Distal 2021 -> Distal 2022 | .65 (.01)** | .70 (.03)** | .61 (.02)** | .65 (.02)** |
| GAD 2021 -> Distal 2022 | .10 (.02)** | .03 (.04) | .10 (.03)** | .10 (.03)** |
| IHS 2021 -> IHS 2022 | .75 (.01)** | .77 (.02)** | .72 (.02)** | .71 (.02)** |
| GAD 2021 -> IHS 2022 | .05 (.02)** | -.02 (.04) | .05 (.03) | .06 (.03) |
| $R^2$ | | | | |
| Distal 2022 | .46** | .47** | .41** | .46** |
| IHS 2022 | .57** | .59** | .53** | .53** |
| GAD 2022 | .54** | .52** | .56** | .50** |
| **Depression Symptoms (PHQ) Model** | | | | |
| PHQ 2021 -> PHQ 2022 | .70 (.01)** | .68 (.03)** | .72 (.02)** | .68 (.02)** |
| Distal 2021 -> PHQ 2022 | .01 (.02) | -.02 (.05) | .05 (.03) | -.01 (.04) |
| Distal 2022 -> PHQ 2022 | .08 (.02)** | .10 (.05) | .05 (.03) | .10 (.04)* |
| **IHS 2021 -> PHQ 2022** | -.02 (.03) | **.07 (.06)** | **-.08(.04)**** | <-.01 (.04) |
| IHS 2022 -> PHQ 2022 | .08 (.03)** | -.03 (.06) | .10 (.04)* | .07 (.04) |
| Distal 2021 -> Distal 2022 | .65 (.01)** | .66 (.03)** | .61 (.02)** | .66 (>02)** |
| PHQ 2021 -> Distal 2022 | .09 (.02) | .07 (.04) | .09 (.03)** | .06 (.03)* |
| IHS 2021 -> IHS 2022 | .74 (.01)** | .77 (.02)** | .72 (.02)** | .71 (.02)** |
| PHQ 2021 -> IHS 2022 | .04 (.02)** | -.02 (.04) | .04 (.03) | .06 (.03)* |

| | | $R^2$ | | |
|---|---|---|---|---|
| Distal 2022 | .46** | .48** | .41** | .46** |
| IHS 2022 | .57** | .59** | .53** | .53** |
| PHQ 2022 | .56** | .51** | .58** | .53** |
| | | **PTSD Symptoms (PCL) Model** | | |
| PCL 2021 -> PCL 2022 | .69 (.01)** | .75 (.03)** | .67 (.02)** | .68 (.02)** |
| **Distal 2021 -> PCL 2022** | .02 (.02) | **-.06 (.05)** | -.01 (.04) | **.07 (.04)*** |
| Distal 2022 -> PCL 2022 | .11 (.02)** | .14 (.05)** | .13 (.04)** | .09 (.02)* |
| IHS 2021 -> PCL 2022 | -.01 (.03) | -.06 (.06) | <.01 (.04) | .02 (.04) |
| IHS 2022 -> PCL 2022 | .07 (.03)** | .01 (.06) | .05 (.04) | .08 (.04) |
| Distal 2021 -> Distal 2022 | .64 (.02)** | .68 (.03)** | .61 (.08)** | .63 (.02)** |
| **PCL 2021 -> Distal 2022** | .10 (.02)** | **.01 (.04)** | .08 (.03)* | **.14 (.03)**** |
| IHS 2021 -> IHS 2022 | .75 (.01)** | .78 (.02)** | .72 (.02)** | .72 (.02)** |
| PCL 2021 -> IHS 2022 | .02 (.02) | -.04 (.04) | .03 (.03) | .02 (.03) |
| | | $R^2$ | | |
| Distal 2022 | .46** | .47** | .41** | .47** |
| IHS 2022 | .57** | .59** | .53** | .52** |
| PCL 2022 | .57** | .58** | .53** | .58** |

Note: *$p < .05$; ** $p < .01$, **bold** indicates path effects that are significantly different by profile. GAD = Generalized Anxiety Disorder-7 Scale (Spitzer et al., 2006) PCL = Posttraumatic Stress Disorder Checklist-6 (Lang & Stein, 2005), PHQ = Patient Health Questionnaire-9 (Kroenke & Spitzer, 2002); IHS = Internalized Homophobia Scale (adapted for internalized transphobia; (Herek et al., 2009)