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## Gender identity and sexual behavior stigmas, severe psychological distress, and suicidality in an online sample of transgender women in the United States

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### INTRODUCTION

Research has consistently documented a high burden of adverse mental health outcomes among transgender persons (1–3). Among transgender women specifically, a high prevalence of both depression and suicidality have been reported (4–5). Prevalence of current/past-year depression in community samples of transgender women has ranged from 18.2% to 62%, compared to 7.1% in the US population (4, 6–12). Past-year suicidal ideation and attempts have rarely been assessed among transgender women, but a recent study of transgender women living with HIV found past-year suicidal ideation at 15.6% and past-year suicide attempts at 7.8%, compared to 4.3% and 0.6% among the overall population in the US, respectively (6–7). In addition, one study of persons living with HIV found that past-month suicidal ideation prevalence was 21.3% and past-month suicide attempt prevalence was 2.0% (13). Lifetime suicidal ideation has ranged from 53% to 56% among

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transgender women, compared to between 8.4% and 9.7% among all adults in the US, suicide attempts have ranged from 28% to 40% among transgender women compared to 4.6% other adults in the US (1, 10, 12, 14–17).

Gender identity-related stigma and associated social determinants of health may contribute to adverse mental health outcomes and may limit access to health care services for transgender women (18–19). While minority status stress processes can be interpersonal, institutional, and structural, consisting of experiences of mistreatment, rejection, discrimination, and violence from others (e.g., enacted stigma), they can also be intrapersonal, consisting of perceptions or expectations of being or having been mistreated, rejected, discriminated against, or treated with violence (e.g., perceived stigma, anticipated stigma) (20). Limited scholarship has examined how perceived and anticipated gender identity-related stigmas are associated with mental health outcomes among transgender women. In addition, there is a dearth of research on the potential impact of stigma related to other socially marginalized attributes or behavior, e.g., sexual behavior, among this population. A range of sexual identities and behaviors are commonly stigmatized, regardless of gender identity (21). However, sexual acts between people who are not heterosexual *and* not cisgender may be particularly stigmatized and may strongly influence mental well-being.

We conducted a cross-sectional pilot study to assess various types of gender identity stigma, sexual behavior stigma, and mental health among transgender women in the US. Our study aimed to (a) document the prevalence of past-year severe psychological distress, suicidal ideation, and suicide attempts, and (b) examine associations between mental health outcomes and perceived, anticipated, and enacted stigmas related to both gender identity and sexual behavior.

## METHODS

Participants were recruited through convenience sampling from websites and through social media applications using banner advertisements or email blasts to members. Those who clicked on ads are taken directly to the survey website hosted on a secure server administered by SurveyGizmo (Boulder, CO, USA) where they were screened for eligibility. All individuals aged 15 years or older who identified as transgender women or transfeminine and who resided in the US were eligible. Those who provided informed consented immediately started the self-administered questionnaire. Survey respondents were not required to provide any directly identifying information but were asked to provide ZIP code which was used to determine area of residence. No incentive was provided for survey participation. Data were collected from March through May 2019. The study protocol was approved by the Institutional Review Board at *<blinded for peer review>*.

Perceived, anticipated, and enacted stigmas as a result of (a) gender identity and (b) sexual behavior were measured by asking participants two sets of 13 questions (Table 1). The sexual behavior stigma scale has been previously used in other populations and in other settings (e.g., 22–25). The internal consistency of the gender identity stigma scale was acceptable (Cronbach's  $\alpha = 0.79$ ), and the internal consistency of the sexual behavior stigma scale was good (Cronbach's  $\alpha = 0.87$ ). In addition to examining individual scale questions,

we also created a summary scale score by summing all affirmative responses to the individual questions (yes=1, no=0).

Severe psychological distress in the past month was measured as a score of 13 using the Kessler 6-question assessment (26). Suicidal ideation in the past year was measured by a single question: “In the past 12 months, up to and including today, did you seriously think about trying to kill yourself?” Suicide attempts in the past year was measured with one question: “During the past 12 months, did you try to kill yourself?”

A series of modified Poisson regression models with log links and robust variance estimators were used to produce prevalence ratios and 95% confidence intervals for unadjusted and adjusted associations between demographic characteristics, gender identity stigma, and sexual behavior stigma with severe psychological distress, suicidal ideation, and suicide attempts. Each of the 13 gender identity stigma scale items, as well as each of the 13 sexual behavior stigma items, were treated as exposures in separate models, as were the gender identity stigma and sexual behavior stigma scales. Each model with each individual stigma item (or scale) was first fit without covariates, and those that were significant at the  $p < 0.10$  level were then fit with covariates. Which covariates to include in which models were determined based on which demographic characteristics were associated the mental health outcome of interest (i.e., severe psychological distress, suicidal ideation, or suicide attempt, depending on the model that was fit) at  $p < 0.10$ . The level of significance for the adjusted models was  $p < 0.05$ . All models were fit using Stata 15.1 (College Station, Texas, USA).

## RESULTS

Of the 381 transgender women who were enrolled and completed the questionnaire, most were 15–29 years, white, non-Hispanic, completed at least some college, made under \$40,000 annually, and identified as bisexual, pansexual or queer (Table 2). Most participants (363/381, 95.28%) endorsed at least one item on the gender identity stigma scale, and 341/381 (89.5%) participants endorsing two or more items. Two-hundred and fifty-seven (67.45%) participants endorsed at least one item on the sexual behavior stigma scale, with 194/381 (50.92%) endorsing two or more items.

The mean score for the gender identity stigma scale was 5.99 (SD=2.95), and the mean score for the sexual behavior stigma scale was 2.43 (SD=2.83). The gender identity stigma and sexual behavior stigma scales were positively correlated ( $r=0.53$ ).

### Severe Psychological Distress

Overall, 198 (52%) participants experienced severe psychological distress in the past month (Table 2). Severe psychological distress was more prevalent among those who were younger, had lower income, identified as bisexual, pansexual or queer, lived in the West or Midwest US, and lived outside of urban/suburban areas. In unadjusted models, severe psychological distress was associated with most of the gender identity stigma items but was most strongly associated with being blackmailed, family gossip, and being afraid to seek health services. A one-point increase in the gender identity stigma scale was associated with a 9% (95% CI: 6%–13%) increased prevalence of severe psychosocial distress.

Severe psychological distress was similarly associated with most of the sexual behavior stigma items but was most strongly associated in unadjusted models with forced sex, healthcare worker gossip, and feeling rejected by friends. A one-point increase in the sexual behavior stigma scale was associated with a 7% (95% CI: 4%–9%) increased prevalence of severe psychological distress.

After controlling for demographic covariates (i.e., age, income, and sexual identity), there remained a significant association between severe psychological distress and the gender identity stigma scale (adjusted PR[aPR]=1.08, 95% CI: 1.05, 1.12) as well as a significant association with the sexual behavior stigma scale (aPR=1.06, 95% CI: 1.03, 1.09).

### **Suicidal Ideation**

Overall, 226 (59.3%) participants had suicidal ideation in the past year (Table 3). Suicidal ideation was more prevalent among those who had lower income and who identified as bisexual, pansexual, queer, or asexual. Suicidal ideation was associated with most of the gender identity stigma items but in the unadjusted models was most strongly associated with feeling as though family members have made discriminatory remarks, being verbally harassed, and feeling excluded by family. Furthermore, a one-point increase in the gender identity stigma scale was associated with an 11% increased prevalence of suicidal ideation.

Suicidal ideation was similarly associated with most of the sexual behavior stigma items but in unadjusted models was most strongly associated with feeling poorly treated in a health facility, being verbally harassed, and forced sex. A one-point increase in the sexual behavior stigma scale was associated with a 5% increased prevalence in suicidal ideation.

After controlling for demographic covariates (i.e., income, sexual identity), there remained a significant association between suicidal ideation and the gender identity stigma scale (aPR=1.10, 95% CI: 1.07, 1.13), as well as a significant association with the sexual behavior stigma scale (aPR=1.05, 95% CI: 1.02, 1.07).

### **Suicide Attempt**

Overall, 50 (13.12%) participants made a suicide attempt in the past year (Table 4). Suicide attempt was more prevalent among those who were younger or who did not live in an urban/suburban area. In unadjusted models, feeling rejected by friends, feeling unprotected by police, and avoiding health services were most strongly associated with suicide attempt. In addition, a one-point increase in the gender identity stigma scale was associated with a 14% increased prevalence in suicide attempt.

In unadjusted models, being treated poorly in a health facility, being blackmailed, and hearing gossip from healthcare workers were most strongly associated with suicide attempt. In addition, a one-point increase in the sexual behavior stigma scale was associated with a 10% increased prevalence in suicide attempt.

After controlling for demographic covariates (i.e. age, urbanicity), there remained a significant association between suicide attempt and the gender identity stigma scale

(aPR=1.17, 95% CI: 1.06, 1.29), as well as a significant association with the sexual behavior stigma scale (aPR=1.10, 95% CI: 1.03, 1.17).

## DISCUSSION

In comparison with majority cisgender samples in the US (6), our sample of transgender women had disproportionately high rates of severe psychological distress and past-year suicidal ideation and suicide attempts. In adjusted analyses, significant positive associations were observed between the gender identity stigma items and scale with severe psychological distress, suicidal ideation, and suicide attempt. Significant and positive associations were similarly observed between the sexual behavior stigma items and scale with severe psychological distress, suicidal ideation, and suicide attempt. These findings suggest that gender identity stigma and sexual behavior stigma may play different but synergistic roles in increasing the experiences of mental distress among transgender women.

The health care-specific sexual practice stigma items were strongly associated with behavior with severe psychological distress, suicidal ideation, and suicide attempts including items measuring having heard health care workers gossip, feeling poorly treated in a health facility, being afraid to seek care, and avoiding seeking care. While previous studies have demonstrated that transgender women may avoid seeking health care and feel discriminated against by health care workers due to transphobia (27–28), this study further suggests that perceived, anticipated, and enacted stigmas related to sexual behavior within the context of health care are also common and strongly related to key mental health outcomes. In one qualitative study, (29) transgender women highlighted the need for informed and respectful sexual health care to avoid exposure to gender binary, cis- and heteronormative expectations that may discourage health care engagement. Gender-affirming and inclusive sexual health programs, on the other hand, may support health care engagement (30–32). The results presented here further support that strategies such as working to consider, assess, and understand diverse sexual behavior among transgender women and transgender people more broadly – may have a positive effect on transgender women’s health care engagement, and, consequently, their mental health.

There are relatively few reports of specific kinds of violence outside of physical assault, sexual assault, or verbal assaults toward transgender women, however, one study (33) found that 2% of transgender women experienced blackmail or extortion. In our study, around one in seven individuals experienced blackmail due to gender identity, and about one in 10 individuals experienced blackmail due to sexual behavior. This form of violence (i.e., blackmail) emerged as having strong associations with severe psychological distress and suicide attempts. In addition, sexual violence was prevalent with 2 in 10 individuals reporting experiencing sexual violence due to gender identity, and 1 in 10 individuals reporting experiencing sexual violence due to sexual behavior. Forced sex due to sexual behavior was associated with both severe psychological distress and suicidal ideation. It is possible that structural stigma in the form of systematic discrimination against transgender persons in health care, housing, and employment contexts could increase opportunities for violence, e.g., blackmail, sexual violence, with no legal recourse (34–35). In addition, community stigma and social norms that oppress and devalue transgender persons, and

gender and sexual diversity at large, may produce environments where violence targeting transgender women occurs in communities, families, and intimate partnerships (36).

Prior research has proposed that perceived and anticipated stigmas may serve as barriers to accessing health care, including mental health care, while other studies have found that the perception of stigmas may be higher among individuals who are receiving mental health services that could make them more stigma-aware (36–37). In either case, our results suggest that mental health care that moves beyond non-discrimination efforts and toward care that is informed and intentionally gender identity and sexuality inclusive, non-stigmatizing, and affirming for transgender women to ensure access to, and continued engagement for, individuals who may require mental health services, is needed. Connecting transgender women with both gender identity and sexuality affirming mental health services is key, including needing to engage trans-lead or trans-collaborative community-based organizations for direct outreach efforts through social media campaigns and other services.

The findings of this study should be interpreted considering several limitations. All measures used were self-reported and therefore may be subject to recall and social desirability biases. For example, participants may have underreported severe psychological distress, suicidal ideation, and suicide attempts due to the sensitive nature of these topics. In addition, the data were cross-sectional and therefore we could not provide evidence for temporality or causality in the associations between gender identity and sexual behavior stigmas with severe psychological distress, suicidal ideation, and suicide attempts. Although associations were observed between these variables, the relatively small sample size, impacts the study's power and potential reproducibility of the results. An additional limitation is that a convenience sample of participants were recruited online was used, which limits the study's generalizability to transgender women who may have limited internet access or who do not frequent the websites that were used to recruit participants.

Taken together, these results call attention to sustained and harmful associations of both gender identity and sexual behavior stigma with severe psychological distress, suicidal ideation, and suicide attempt among transgender women in the US. While interventions in the US are available, they tend to be focused in select urban centers and access to multilevel interventions that work to address multiple intersecting types related to gender identity and sexual behavior remains limited. Moving forward necessitates continued training for all providers in trans-competent care, as well as the development of newer engagement and delivery approaches for stigma mitigation interventions to address the harmful outcomes of stigma, including sustained mental and sexual health inequities among transgender women across the US.

## Source of Funding and Conflicts of Interest

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**Table 1.**

Measurement of gender identity and sexual behavior stigmas.

Items	Type of Stigma	Properties			
		Mean (SD)	Median	Range	Alpha
Gender Identity Stigma (Scale)		5.99 (2.95)	6	0–13	0.79
Have you ever felt excluded from family activities because of your gender identity?	Perceived				
Have you ever felt that family members have made discriminatory remarks or gossiped about you because of your gender identity?	Perceived				
Have you ever felt rejected by your friends because of your gender identity?	Perceived				
Have you ever felt afraid to go to health care services because of your gender identity?	Anticipated				
Have you ever avoided going to health care services because of your gender identity?	Anticipated				
Have you ever felt that you were not treated well in a health center because of your gender identity?	Perceived				
Have you ever heard health care providers gossiping about you (talking about you) because of your gender identity?	Enacted				
Have you ever felt that the police refused to protect you because of your gender identity?	Perceived				
Have you ever felt scared to be in public places because of your gender identity?	Perceived				
Have you ever been verbally harassed and felt it was because of your gender identity?	Enacted				
Have you ever been blackmailed by someone because of your gender identity?	Enacted				
Has someone ever physically hurt you (pushed, shoved, slapped, hit, kicked, choked or otherwise physically hurt you)? [AND] Do you believe any of these experiences of physical violence was/were related to your gender identity?	Enacted				
Have you ever been forced to have sex when you did not want to? (By forced, I mean physically forced, coerced to have sex, or penetrated with an object, when you did not want to). [AND] Do you believe any of these experiences of sexual violence were related to your gender identity?	Enacted				
Sexual Behavior Stigma (Scale)		2.43 (2.83)	2	0–13	0.87
Have you ever felt excluded from family activities because of who you have sex with?	Perceived				
Have you ever felt that family members have made discriminatory remarks or gossiped about you because of who you have sex with?	Perceived				
Have you ever felt rejected by your friends because of who you have sex with?	Perceived				
Have you ever felt afraid to go to health care services because of who you have sex with?	Anticipated				
Have you ever avoided going to health care services because of who you have sex with?	Anticipated				
Have you ever felt that you were not treated well in a health center because of who you have sex with?	Perceived				

Items	Type of Stigma	Properties			
		Mean (SD)	Median	Range	Alpha
Have you ever heard health care providers gossiping about you (talking about you) because of who you have sex with?	Enacted				
Have you ever felt that the police refused to protect you because of who you have sex with?	Perceived				
Have you ever felt scared to be in public places because of who you have sex with?	Perceived				
Have you ever been verbally harassed and felt it was because of who you have sex with?	Enacted				
Have you ever been blackmailed by someone because of who you have sex with?	Enacted				
Has someone ever physically hurt you (pushed, shoved, slapped, hit, kicked, choked or otherwise physically hurt you)? [AND] Do you believe any of these experiences of physical violence was/were related to who you have sex with?	Enacted				
Have you ever been forced to have sex when you did not want to? (By forced, I mean physically forced, coerced to have sex, or penetrated with an object, when you did not want to). [AND] Do you believe any of these experiences of sexual violence were related to who you have sex with?	Enacted				

Response options: 0—no or 1—yes.

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**Table 2.**

Prevalence and correlates of severe psychological distress among US transgender women in the TWIST study, 2019.

Characteristics	Total	Severe Distress Psychological		PR (95% CI)	aPR (95% CI)*
		Yes <i>n</i> =198	No <i>n</i> =183		
Age, <i>n</i> (%)					
15–24	194 (50.9)	120 (61.9)	74 (38.1)	ref	
25–29	61 (16.0)	33 (54.1)	28 (45.9)	0.87 (0.68, 1.13)	
30–39	44 (11.5)	22 (50.0)	22 (50.0)	0.81 (0.59, 1.11)	
40+	82 (21.5)	23 (28.0)	59 (72.0)	0.45 (0.32, 0.65)	
Race, <i>n</i> (%)					
Black, non-Hispanic	8 (2.1)	4 (50.0)	4 (50.0)	0.96 (0.47, 1.94)	
Hispanic	46 (12.1)	23 (50.0)	23 (50.0)	0.96 (0.70, 1.31)	
White, non-Hispanic	276 (72.4)	144 (52.2)	132 (47.8)	ref	
Other/multiple races/unknown	51 (13.4)	27 (52.9)	24 (47.1)	1.01 (0.76, 1.35)	
Education Completed, <i>n</i> (%)					
College	90 (23.6)	36 (40.0)	54 (60.0)	0.75 (0.56, 1.01)	
Some college/AA	150 (39.4)	80 (53.3)	70 (46.7)	ref	
HS diploma or less	133 (35.7)	77 (57.9)	56 (42.1)	1.09 (0.88, 1.34)	
Unknown	8 (2.1)	5 (62.5)	3 (37.5)	1.17 (0.67, 2.05)	
Income, <i>n</i> (%)					
\$75,000+	52 (13.6)	18 (34.6)	34 (65.4)	1.05 (0.39, 1.35)	
\$40,000–\$74,999	65 (17.1)	30 (46.2)	35 (53.8)	0.77 (0.57, 1.04)	
\$20,000–\$39,999	81 (21.3)	39 (48.1)	42 (51.9)	0.80 (0.62, 1.05)	
\$0–\$19,999	132 (34.6)	79 (59.8)	53 (40.2)	ref	
Unknown	51 (13.4)	32 (62.7)	19 (37.3)	1.05 (0.81, 1.35)	
Sexual Identity					
Gay or homosexual	56 (14.7)	23 (41.1)	33 (58.9)	0.72 (0.51, 1.01)	
Straight or heterosexual	37 (9.7)	11 (29.7)	26 (70.3)	0.52 (0.31, 0.86)	
Bisexual or pansexual	169 (44.4)	97 (57.4)	72 (42.6)	ref	
Queer	68 (17.8)	42 (61.8)	26 (38.2)	1.08 (0.86, 1.35)	
Asexual	6 (1.6)	1 (16.7)	5 (83.3)	0.29 (0.69, 1.26)	
Other/unknown	45 (11.8)	24 (53.3)	21 (46.7)	0.93 (0.69, 1.26)	
Region, <i>n</i> (%)					
West	101 (26.5)	53 (52.5)	48 (47.5)	1.08 (0.83, 1.40)	
Midwest	73 (19.2)	43 (58.9)	30 (41.2)	1.21 (0.93, 1.58)	
Northeast	88 (23.1)	44 (50.0)	44 (50.0)	1.03 (0.78, 1.36)	
South	119 (31.2)	58 (48.7)	61 (51.3)	ref	
Urbanicity					
Rural and small/medium city	84 (22.0)	47 (56.0)	37 (44.0)	ref	
Urban and suburban	297 (78.0)	152 (51.2)	145 (48.8)	0.91 (0.73, 1.13)	
Gender Identity Stigma					

Characteristics	Total	Severe Distress		PR (95% CI)	aPR (95% CI)*
		Yes <i>n</i> =198	No <i>n</i> =183		
Excluded by family	282 (74.0)	155 (55.0)	127 (45.0)	1.48 (0.99, 2.20)	-
Gossiped about by family	280 (73.5)	155 (55.4)	125 (44.6)	1.71 (1.09, 2.70)	1.60 (1.11, 2.30)
Felt rejected by friends	241 (63.4)	139 (57.7)	102 (42.3)	1.38 (1.01, 1.89)	1.33 (1.06, 1.66)
Afraid to seek health services	200 (52.5)	124 (62.0)	76 (38.0)	1.49 (1.12, 2.00)	1.33 (1.08, 1.63)
Avoided health services	157 (41.2)	98 (62.4)	59 (37.6)	1.39 (1.05, 1.84)	1.26 (1.04, 1.51)
Treated poorly in health facility	115 (30.2)	67 (58.3)	48 (41.7)	1.25 (0.92, 1.69)	-
Healthcare workers gossiped	80 (21.0)	52 (65.0)	28 (35.0)	1.38 (1.00, 1.90)	1.44 (1.20, 1.73)
Did not feel protected by police	85 (22.3)	51 (60.0)	34 (40.0)	1.30 (0.94, 1.81)	-
Felt scared in public	328 (86.1)	181 (55.2)	147 (44.8)	1.73 (1.04, 2.88)	1.44 (0.99, 2.11)
Verbally harassed	288 (75.6)	157 (54.5)	131 (45.5)	1.42 (0.96, 2.10)	-
Blackmailed	54 (14.2)	41 (75.9)	13 (24.1)	1.58 (1.12, 2.24)	1.39 (1.15, 1.69)
Physically hurt	114 (29.9)	75 (65.8)	39 (34.2)	1.12 (0.78, 1.60)	-
Forced sex	59 (15.5)	44 (74.6)	15 (25.4)	1.17 (0.77, 1.79)	-
<i>Total Scale Score (GI)</i>	-	-	-	1.09 (1.06, 1.13)	1.08 (1.05, 1.12)
<b>Sexual Behavior Stigma</b>					
Excluded by family	91 (23.9)	58 (63.7)	33 (36.3)	1.32 (0.97, 1.80)	-
Gossiped about by family	141 (37.)	83 (58.9)	58 (41.1)	1.26 (0.94, 1.69)	-
Felt rejected by friends	101 (26.5)	69 (68.3)	32 (31.7)	1.48 (1.11, 2.00)	1.43 (1.20, 1.71)
Afraid to seek health services	49 (12.9)	34 (69.4)	15 (30.6)	1.39 (1.11, 1.73)	1.26 (1.01, 1.58)
Avoided health services	36 (9.4)	25 (69.4)	11 (30.6)	1.36 (1.06, 1.75)	1.25 (0.98, 1.60)
Treated poorly in health facility	33 (8.7)	24 (72.7)	9 (27.3)	1.47 (1.16, 1.86)	1.45 (1.16, 1.82)
Healthcare workers gossiped	24 (6.3)	18 (75.0)	6 (25.0)	1.51 (1.17, 1.95)	1.64 (1.28, 2.10)
Did not feel protected by police	44 (11.5)	25 (56.8)	19 (43.4)	1.11 (0.84, 1.48)	-
Felt scared in public	126 (35.7)	79 (62.7)	47 (37.3)	1.33 (1.11, 1.62)	1.24 (1.02, 1.51)
Verbally harassed	144 (37.8)	98 (68.1)	46 (31.9)	1.37 (1.13, 1.66)	1.32 (1.09, 1.60)
Blackmailed	35 (9.2)	25 (71.4)	10 (28.6)	1.45 (1.14, 1.83)	1.30 (1.03, 1.62)
Physically hurt	59 (15.5)	40 (67.8)	19 (32.2)	1.40 (1.13, 1.73)	1.36 (1.10, 1.69)
Forced sex	34 (8.9)	26 (76.5)	8 (23.5)	1.54 (1.24, 1.92)	1.41 (1.14, 1.74)
<i>Total Scale Score (SB)</i>	-	-	-	1.07 (1.04, 1.09)	1.06 (1.03, 1.09)

\* Demographic covariates: age, income, and sexual identity.

**Table 3.**

Prevalence and correlates of suicidal ideation among US transgender women in the TWIST study, 2019.

Characteristics	Suicidal Ideation		PR (95% CI)	aPR (95% CI)
	Yes <i>n</i> =226	No <i>n</i> =155		
Age, <i>n</i> (%)				
15–24	123 (63.4)	71 (36.6)	ref	
25–29	36 (59.0)	25 (41.0)	0.93 (0.74, 1.18)	
30–39	26 (59.1)	18 (40.9)	0.93 (0.71, 1.22)	
40+	41 (50.0)	41 (50.0)	0.79 (0.62, 1.00)	
Race, <i>n</i> (%)				
Black, non-Hispanic	4 (50.0)	4 (50.0)	0.88 (0.44, 1.77)	
Hispanic	28 (60.9)	18 (39.1)	1.07 (0.83, 1.38)	
White, non-Hispanic	157 (56.9)	119 (43.1)	ref	
Other/multiple races/unknown	37 (72.5)	14 (27.5)	1.28 (1.05, 1.55)	
Education Completed, <i>n</i> (%)				
College	48 (53.3)	42 (46.6)	0.92 (0.73, 1.17)	
Some college/AA	87 (58.0)	63 (42.0)	ref	
HS diploma or less	83 (62.4)	50 (37.6)	1.08 (0.89, 1.30)	
Unknown	8 (100.0)	0 (0.0)	1.72 (1.50, 1.98)	
Income, <i>n</i> (%)				
\$75,000+	24 (46.2)	28 (53.8)	0.72 (0.52, 0.99)	
\$40,000–\$74,999	34 (52.3)	31 (47.7)	0.81 (0.62, 1.06)	
\$20,000–39,999	53 (65.4)	28 (34.6)	1.02 (0.83, 1.24)	
\$0–19,999	85 (64.4)	47 (35.6)	ref	
Unknown	30 (58.8)	21 (41.2)	0.91 (0.70, 1.19)	
Sexual Identity				
Gay or homosexual	30 (53.6)	26 (46.4)	0.83 (0.63, 1.09)	
Straight or heterosexual	12 (32.4)	25 (67.6)	0.50 (0.31, 0.81)	
Bisexual or pansexual	109 (64.5)	60 (35.5)	ref	
Queer	41 (60.3)	27 (39.7)	0.93 (0.75, 1.17)	
Asexual	5 (83.3)	1 (16.7)	1.29 (0.89, 1.88)	
Other/unknown	29 (64.4)	16 (35.6)	1.00 (0.78, 1.28)	
Region, <i>n</i> (%)				
West	65 (64.4)	36 (35.6)	1.13 (0.91, 1.39)	
Midwest	43 (58.9)	30 (41.1)	1.03 (0.81, 1.32)	
Northeast	50 (56.8)	38 (43.2)	0.99 (0.78, 1.26)	
South	68 (57.1)	51 (42.9)	ref	
Urbanicity				
Rural and small/medium city	50 (59.5)	34 (40.5)	ref	
Urban and suburban	176 (59.3)	121 (40.7)	1.00 (0.81, 1.22)	
Gender Identity Stigma				
Excluded by family	182 (64.5)	100 (35.5)	1.74 (1.28, 2.35)	1.62 (1.20, 2.19)

Characteristics	Suicidal Ideation		PR (95% CI)	aPR (95% CI)
	Yes n=226	No n=155		
Gossiped about by family	182 (65.0)	98 (35.0)	2.11 (1.45, 3.07)	1.98 (1.36, 2.88)
Felt rejected by friends	162 (67.2)	79 (32.8)	1.42 (1.16, 1.74)	1.38 (1.12, 1.68)
Afraid to seek health services	141 (70.5)	59 (29.5)	1.51 (1.25, 1.81)	1.47 (1.22, 1.76)
Avoided health services	113 (72.0)	44 (28.0)	1.43 (1.21, 1.68)	1.38 (1.17, 1.63)
Treated poorly in health facility	84 (73.0)	31 (27.0)	1.41 (1.20, 1.67)	1.41 (1.19, 1.67)
Healthcare workers gossiped	56 (70.0)	24 (30.0)	1.24 (1.03, 1.48)	1.22 (1.02, 1.46)
Did not feel protected by police	65 (76.5)	20 (23.5)	1.42 (1.21, 1.68)	1.42 (1.20, 1.70)
Felt scared in public	206 (62.8)	122 (37.2)	1.57 (1.11, 2.23)	1.47 (1.04, 2.08)
Verbally harassed	189 (65.6)	99 (34.4)	2.05 (1.47, 2.86)	2.01 (1.45, 2.79)
Blackmailed	42 (77.8)	12 (22.2)	1.40 (1.18, 1.67)	1.37 (1.14, 1.64)
Physically hurt	87 (76.3)	27 (23.7)	1.55 (1.31, 1.83)	1.56 (1.32, 1.86)
Forced sex	48 (81.4)	11 (18.6)	1.52 (1.29, 1.80)	1.47 (1.25, 1.74)
<i>Total Scale Score (GI)</i>	-	-	1.11 (1.08, 1.14)	1.10 (1.07, 1.13)
Sexual Behavior Stigma				
Excluded by family	61 (67.0)	30 (33.0)	1.19 (0.99, 1.42)	1.22 (1.02, 1.45)
Gossiped about by family	91 (64.5)	50 (35.5)	1.18 (0.99, 1.41)	1.19 (1.00, 1.42)
Felt rejected by friends	73 (72.3)	28 (27.7)	1.35 (1.14, 1.59)	1.34 (1.14, 1.58)
Afraid to seek health services	36 (73.5)	13 (26.5)	1.26 (1.03, 1.53)	1.21 (0.98, 1.48)
Avoided health services	25 (69.4)	11 (30.6)	1.17 (0.92, 1.49)	-
Treated poorly in health facility	26 (78.8)	7 (21.2)	1.40 (1.15, 1.71)	1.35 (1.09, 1.67)
Healthcare workers gossiped	17 (70.8)	7 (29.2)	1.23 (0.93, 1.61)	-
Did not feel protected by police	32 (72.7)	12 (27.3)	1.26 (1.02, 1.56)	1.26 (1.01, 1.59)
Felt scared in public	83 (65.9)	43 (34.1)	1.19 (1.01, 1.42)	1.18 (1.00, 1.41)
Verbally harassed	104 (72.2)	40 (27.8)	1.42 (1.20, 1.67)	1.41 (1.19, 1.66)
Blackmailed	27 (77.1)	8 (22.9)	1.36 (1.11, 1.66)	1.33 (1.08, 1.64)
Physically hurt	42 (71.2)	17 (28.8)	1.28 (1.06, 1.55)	1.28 (1.05, 1.56)
Forced sex	28 (82.4)	7 (20.6)	1.48 (1.23, 1.79)	1.42 (1.17, 1.71)
<i>Total Scale Score (SB)</i>	-	-	1.05 (1.03, 1.07)	1.05 (1.02, 1.07)

Demographic covariates: income, sexual identity.

**Table 4.**

Prevalence and correlates of suicide attempt among US transgender women in the TWIST study, 2019.

Characteristics	Suicide Attempt		PR (95% CI)	aPR (95% CI) <sup>‡</sup>
	Yes <i>n</i> =50	No <i>n</i> =172		
Age, <i>n</i> (%)				
15–24	35 (28.7)	87 (71.3)	ref	
25–29	7 (20.0)	28 (80.0)	0.70 (0.34, 1.43)	
30–39	5 (19.2)	21 (80.8)	0.67 (0.29, 1.55)	
40+	3 (7.7)	36 (92.3)	0.27 (0.09, 0.83)	
Race, <i>n</i> (%)				
Black, non-Hispanic	3 (75.0)	1 (25.0)	3.28 (1.73, 6.20)	
Hispanic	6 (21.4)	22 (78.6)	0.94 (0.43, 2.02)	
White, non-Hispanic	35 (22.9)	118 (77.1)	ref	
Other/multiple races/unknown	6 (16.2)	31 (83.8)	0.71 (0.32, 1.56)	
Education Completed, <i>n</i> (%)				
College	5 (10.9)	41 (89.1)	0.53 (0.21, 1.33)	
Some college/AA	18 (20.7)	69 (79.3)	ref	
HS diploma or less	24 (29.6)	57 (70.4)	1.43 (0.84, 2.44)	
Unknown	3 (37.5)	5 (62.5)	1.81 (0.68, 4.86)	
Income, <i>n</i> (%)				
\$75,000+	5 (20.8)	19 (79.2)	0.78 (0.33, 1.83)	
\$40,000–\$74,999	6 (17.6)	28 (82.4)	0.66 (0.29, 1.48)	
\$20,000–39,999	7 (13.5)	45 (86.5)	0.50 (0.23, 1.09)	
\$0–19,999	22 (26.8)	60 (73.2)	ref	
Unknown	10 (33.3)	20 (66.6)	1.24 (0.67, 2.31)	
Sexual Identity				
Gay or homosexual	4 (13.3)	26 (86.7)	0.60 (0.23, 1.60)	
Straight or heterosexual	3 (25.0)	9 (75.0)	1.13 (0.40, 3.20)	
Bisexual or pansexual	24 (22.2)	84 (77.8)	ref	
Queer	10 (25.0)	30 (75.0)	1.13 (0.59, 2.14)	
Asexual	1 (20.0)	4 (80.0)	0.90 (0.15, 5.40)	
Other/unknown	8 (29.6)	19 (70.4)	1.33 (0.67, 2.64)	
Region, <i>n</i> (%)				
West	11 (17.7)	51 (82.3)	1.10 (0.51, 2.35)	
Midwest	14 (32.6)	29 (67.4)	2.01 (1.01, 4.02)	
Northeast	14 (28.6)	35 (71.4)	1.77 (0.88, 3.56)	
South	11 (16.2)	57 (83.8)	ref	
Urbanicity				
Rural and small/medium city	17 (34.0)	33 (66.0)	ref	
Urban and suburban	33 (19.2)	139 (80.8)	0.56 (0.34, 0.93)	
Gender Identity Stigma				
Excluded by family	41 (23.0)	137 (77.0)	1.34 (0.57, 3.11)	



Characteristics	Suicide Attempt		PR (95% CI)	aPR (95% CI) <sup>‡</sup>
	Yes n=50	No n=172		
Gossiped about by family	43 (24.0)	136 (76.0)	1.20 (0.48, 3.00)	-
Felt rejected by friends	42 (26.4)	117 (73.6)	2.26 (1.08, 4.77)	2.44 (1.16, 5.11)
Afraid to seek health services	35 (25.2)	104 (74.8)	1.53 (0.86, 2.72)	-
Avoided health services	32 (29.1)	78 (70.9)	1.87 (1.10, 3.16)	1.74 (1.04, 2.91)
Treated poorly in health facility	25 (30.5)	57 (69.5)	1.63 (1.00, 2.67)	2.14 (1.29, 3.56)
Healthcare workers gossiped	15 (27.8)	39 (72.2)	1.40 (0.82, 2.39)	-
Did not feel protected by police	23 (36.5)	40 (63.5)	2.11 (1.29, 3.46)	2.40 (1.49, 3.84)
Felt scared in public	47 (23.3)	155 (76.7)	1.55 (0.53, 4.55)	-
Verbally harassed	43 (23.1)	143 (76.9)	1.16 (0.50, 2.65)	-
Blackmailed	15 (35.7)	27 (64.3)	1.85 (1.11, 3.08)	1.64 (0.98, 2.72)
Physically hurt	21 (24.7)	64 (75.3)	1.25 (0.73, 2.11)	-
Forced sex	10 (21.7)	36 (78.3)	0.93 (0.50, 1.72)	-
<i>Total Scale Score (GI)</i>	-	-	1.14 (1.04, 1.26)	1.17 (1.06, 1.29)
Sexual Behavior Stigma				
Excluded by family	21 (35.0)	39 (65.0)	1.97 (1.20, 3.21)	2.04 (1.29, 3.23)
Gossiped about by family	27 (31.0)	60 (69.0)	1.78 (1.06, 2.98)	1.78 (1.09, 2.90)
Felt rejected by friends	17 (24.3)	53 (75.7)	1.17 (0.69, 1.99)	-
Afraid to seek health services	13 (37.1)	22 (62.9)	1.95 (1.15, 3.30)	1.90 (1.15, 3.13)
Avoided health services	9 (37.5)	15 (62.5)	1.90 (1.05, 3.44)	1.93 (1.09, 3.44)
Treated poorly in health facility	11 (44.0)	14 (56.0)	2.34 (1.37, 3.99)	2.70 (1.62, 4.50)
Healthcare workers gossiped	6 (40.0)	9 (60.0)	1.98 (1.00, 3.91)	2.17 (1.14, 4.10)
Did not feel protected by police	11 (36.7)	19 (63.3)	1.95 (1.11, 3.43)	2.21 (1.30, 3.73)
Felt scared in public	21 (26.3)	59 (73.8)	1.34 (0.81, 2.22)	-
Verbally harassed	24 (23.5)	78 (76.5)	1.20 (0.72, 2.00)	-
Blackmailed	11 (40.7)	16 (59.3)	2.13 (1.24, 3.66)	1.88 (1.06, 3.32)
Physically hurt	11 (27.5)	29 (72.5)	1.27 (0.71, 2.28)	-
Forced sex	7 (25.9)	20 (74.1)	1.18 (0.58, 2.38)	-
<i>Total Scale Score (SP)</i>	-	-	1.10 (1.03, 1.17)	1.10 (1.03, 1.17)

<sup>‡</sup>Demographic covariates: age, urbanicity.