Substance Use to Cope with Stigma in Healthcare Among U.S. Female-to-Male Trans Masculine Adults

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Abstract

Purpose: Enacted and anticipated stigma exist within healthcare settings for transgender people, but research has yet to examine the effects of these forms of stigma on the substance use behaviors of female-to-male (FTM) trans masculine people.

Methods: Data were analyzed from the cross-sectional U.S. National Transgender Discrimination Survey, a convenience sample of transgender adults purposively sampled in 2008. Trans masculine respondents ($n = 2,578$) were identified using a two-step method: Step 1, Assigned birth sex; Step 2, Current gender identity. A gender minority stress model of substance use was tested to examine the relation of enacted and anticipated stigma with substance use to cope with mistreatment.

Results: Overall, 14.1% of the sample reported having been refused care by a provider (*enacted* stigma), 32.8% reported delaying needed medical care when sick/injured, and 39.1% delayed routine preventive care (*anticipated* stigma). Having been refused care was significantly associated with avoidance of healthcare, including delaying needed medical care when sick/injured and delaying routine preventive medical care. Substance use to cope with mistreatment was self-reported by 27.6% of the sample. *Enacted* stigma by providers was associated with self-reported substance use to cope. Delays in both needed and preventive care (*anticipated* stigma) were highly associated with substance use, and attenuated the effect of *enacted* stigma.

Conclusion: Gender minority-related stressors, particularly *enacted* and *anticipated* stigma in healthcare, should be integrated into substance use and abuse prevention and intervention efforts with this underserved population.

Key words: healthcare, stigma, substance use, transgender.

Introduction

THE HEALTH AND WELLBEING of female-to-male (FTM) trans masculine people—individuals assigned a female sex at birth who identify as male, men, female-to-male, transgender men, bois, masculine of center, gender variant, and/or non-binary genderqueer or gender nonconforming—is understudied globally, particularly relating to experiences of stigma and discrimination, which represents a fundamental source of health disparities.^{1,2} Studies show FTM communities experience a high burden of discrimination in multiple settings, including healthcare settings.^{3,4} However, limited research to date considers associations between experiences of discrimination in healthcare settings and healthcare access

and utilization behaviors, such as delaying or avoiding care.⁵ Substance use is prevalent in transgender communities.^{6,7} Studies have documented associations between general forms of transgender-based stigma and adverse mental health outcomes.⁷ However, research has yet to examine whether experiences of transgender-based stigma within healthcare settings are associated with substance use among trans masculine people. Understanding the associations between transgender-based stigma in healthcare settings and substance use to cope with mistreatment is an important next step towards the development of cost-effective clinical interventions specific to this population as well as to implement recommendations from the U.S. Preventive Services Task Force to screen and conduct brief interventions in healthcare settings.^{8,9}

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FIG. 1. A Gender Minority Stress Framework.

Borrowing from the sexual minority stress theory,^{10,11} a gender minority stress framework has been proposed which describes two pathways that may explain adverse health outcomes for transgender and gender nonconforming people.¹² First, *enacted* transgender stigma is the actual (objective) experience of discrimination due to being transgender and/or gender nonconforming, such as being denied healthcare or emergency services on the basis of being transgender. Second, *anticipated* transgender stigma is the (subjective) fear of being discriminated against in a healthcare setting due to being transgender and/or gender nonconforming, for instance, delaying needed or preventive health care. In accordance with minority stress models, transgender people who do not have adequate financial, psychological, social, or physical resources to have their healthcare needs met will experience increased stress, and consequently, maladaptive or avoidant coping strategies, such as substance use, which may be used to manage and alleviate stress given inadequate resources.^{10,13}

This study seeks to test a gender minority stress-based¹² model of stigma in healthcare and substance use behaviors in FTM trans masculine adults (Figure 1). We first propose that there will be a direct and statistically significant relationship between *enacted* stigma in a healthcare setting and substance use to cope with mistreatment. Second, we expect a statistically significant relationship between *enacted* stigma and *anticipated* stigma. Third, we expect that *anticipated* stigma will significantly attenuate the relationship between the enacted stigma and substance use; that is, we expect anticipated stigma to partially mediate the relation between *enacted* stigma and substance use. Finally, we expect a direct and statistically significant relationship between *anticipated* stigma and substance use, even with inclusion of enacted stigma. Thus, we hypothesize both *enacted* and *anticipated* stigma processes are key to understanding substance use in FTM trans masculine adults.

Materials and Methods

Data source

In 2008, the National Center for Transgender Equality (NCTE) and the National Gay and Lesbian Task Force (NGLTF) partnered to conduct a cross-sectional survey of transgender discrimination. For specific information regarding sampling and recruitment techniques, refer to The National Transgender Discrimination Survey (NTDS).¹⁴ The current sec-

ondary analysis of NTDS data was approved by the Institutional Review Board at Harvard T.H. Chan School of Public Health.

Eligibility criteria for NTDS participation were: being age 18 years or older; voluntarily agreeing to complete the survey; and identifying as transgender. “Transgender” was defined broadly to include those who transition from one gender to another, and those who may not choose to fully socially, medically, or legally transition. This includes cross-dressers and people who consider themselves to be genderqueer, androgynous, and those whose gender nonconformity is a part of their identity. Inclusive language regarding all manners of gender nonconformity was used to ensure broad participation in the survey.

Data analytic sample

A total of 2,578 respondents who identified on the female-to-male (FTM)/trans masculine spectrum (40% of the original NTDS sample) were included in this analysis. Gender was operationalized using a two-step method to cross-classify natal sex/gender identity status: Step 1, Assigned sex at birth, Step 2: Gender identity.¹⁵ Those who selected “female” as their assigned sex at birth were then cross-classified with current primary gender identities of male/man: Part-Time One Gender, Part-Time Another, or, Gender Not Listed Here. Among the respondents included in the current study, 51.5% endorsed a binary gender identity (described their gender as male/man); 48.5% indicated a non-binary gender identification (reported living part-time as one gender, part-time as another gender, or identifying as a “Gender Not Listed Here”).

Measures

Health indicator: Substance use to cope. Respondents were asked whether they use or have used substances to cope with mistreatment: (“I drink or misuse drugs to cope with the mistreatment I face or faced as a transgender or gender nonconforming person”; yes/no).

Hypothesized mediators: Enacted and anticipated stigma in healthcare. *Enacted* stigma was operationalized by asking whether participants had ever been refused healthcare by a provider due to being transgender and/or gender nonconforming: (“A doctor or other provider refused to treat me because I am transgender/gender nonconforming”; yes/no). *Anticipated* stigma was categorized according to whether participants had ever delayed medical care when sick/injured: (“I have postponed or not tried to get needed medical

care when I was sick or injured due to fear of discrimination due to being transgender/gender nonconforming"; yes/no), or whether they had ever delayed routine preventive care: ("I have postponed or not tried to get check-ups or other preventive medical care due to fear of discrimination due to being transgender/gender nonconforming"; yes/no).

Covariates and confounders. For all variables in the analysis, the largest within category group was selected as the referent group. *Age:* To be consistent with U.S. Census categories, we categorized age into three groups: 18–24 years, 25–44 years, 45 years and older. *Race/Ethnicity:* Race/Ethnicity was operationalized as a categorical variable: white (non-Hispanic), black/African American, American Indian or Alaska Native, Hispanic/Latino, Other Race/Ethnicity, and Multiracial or Mixed Race. A binary indicator for people of color (POC) (any racial/ethnic minority yes/no) was also specified. *Income & Education:* Tertiles of annual income were used: low (<\$19,999), middle (\$20,000–\$49,000), and high (\$50,000–\$99,000). Education was categorized into high school diploma or below, some college or associate's degree, college degree, or graduate degree. *Health Insurance:* Participants were categorized as insured private, insured public, or uninsured. *Medical Gender Affirmation:* Participants were asked about whether they had ever taken hormones for transgender-related purposes (yes/no) and whether they had ever had surgery for transgender related purposes (yes/no). *Visual Gender Nonconformity:* A single item question asked participants about their perceived visual gender nonconformity: "People can tell I'm transgender/gender non-conforming even if I don't tell them." Response options were given on a 5-point Likert scale: 1 = always, 2 = most of the time, 3 = sometimes, 4 = occasionally, 5 = never. Responses were reverse-coded so that higher scores indicated higher levels of visual gender nonconformity. Levels of gender nonconformity were then grouped into tertiles: 1 = low (never); 2 = moderate (occasionally or sometimes); and 3 = high (always and most of the time). *Sexual Orientation Identity:* Sexual orientation was coded as heterosexual, gay, bisexual, or queer (included in this were respondents who identified their sexual orientation as non-binary, including as queer, asexual, and other identities that were not heterosexual, gay, or bisexual). *Survey Design Variables:* Paper data collection methods were not implemented in all geographic regions sampled. Thus, geographic region was considered a potential confounder and was controlled for in statistical analyses. Four geographic regions were specified: Region 1 (33.4% New England/Mid Atlantic); Region 2 (24.8% Southern); Region 3 (37.6% Midwest/West); and Region 4 (14.2% California). Data collection method (online versus paper) was specified as a covariate in analyses.

Statistical Analyses

SAS[®] version 9.3 statistical software was used to analyze data. Univariable, descriptive statistics were obtained for all variables of interest. Distributions of individual items were assessed, including missing values. Because paper-survey respondents were more likely to have missing item-level data than online respondents, data were not missing completely at random, so data were multiply imputed. A fully conditional specification (FCS) imputation method was used.^{16,17} All subsequent statistical analyses were conducted in the imputed dataset.

We compared trans masculine respondents ($n=2,578$) with and without a self-reported history of ever having been refused healthcare by a provider, our measure of *enacted* stigma. A single multivariable logistic regression model was estimated with "Ever Refused Care" (yes/no) as an outcome that included sociodemographics (age, binary gender, race/ethnicity, income, education, health insurance, sexual orientation identity, visual gender nonconforming expression, cross-sex hormone use, surgical gender affirmation, geographic region, and data collection method). Second, we modeled two binary indicators to examine *anticipated* stigma: delaying needed medical care when sick or injured and delaying routine preventive care. The primary statistical predictor was *enacted* stigma (e.g., ever having been refused care by a provider), and models were adjusted for sociodemographics as previously stated. Next, models examined substance use to cope as a function of *enacted* stigma (Model 1, Table 1) and *anticipated* stigma (Model 2, Table 1). Risk ratios were estimated¹⁸ rather than odds ratios because the prevalence of outcomes were >10%.

Results

Sample demographics

Sample demographics are presented in Table 2 (total sample column). A majority of the sample (64%) were age 25–44 years. Approximately one quarter (26%) were people of color. Respondents reported a range of income, but were mostly educated, and the majority were privately insured (70%). Approximately half (49%) were taking cross-sex hormones and one third (36%) had some form of gender affirmation surgery. The most commonly endorsed sexual orientation was queer (51%).

Sociodemographic correlates of enacted stigma (refusal of care)

In total, 14% of the sample reported *enacted* stigma by healthcare providers in the form of having been refused care due to being transgender and/or gender nonconforming. Table 2 compares the sociodemographics of trans masculine respondents who reported being refused care to those who did not. In a multivariable logistic regression model, the sociodemographic correlates of having been refused care were: having a minority race/ethnicity (compared to being white, non-Hispanic), being in the middle income bracket (vs. high income), lower education (having a college degree was protective), having public health insurance (vs. private), cross-sex hormone use (vs. no hormones), and surgical gender affirmation (vs. no surgery). No other variables were associated with refusal of care.

Linking enacted stigma with anticipated stigma

Overall, 33% of the sample delayed needed medical care when sick/injured and 39% delayed routine preventive care. The proportion of respondents who delayed medical care when sick or injured was higher among those who also experienced *enacted* stigma (70%) than among those who did not experience *enacted* stigma (27%, $P<.001$). The proportion of respondents who delayed routine preventive care was also higher among those who also experienced *enacted* stigma (76%) than among those who did not (33%, $P<.001$).

After adjusting for sociodemographics, *enacted* stigma was associated with delaying needed medical care when sick or

TABLE 1. MODELING SUBSTANCE USE TO COPE WITH MISTREATMENT AS A FUNCTION OF ENACTED STIGMA IN HEALTHCARE AMONG TRANS MASCULINE RESPONDENTS (N=2,578)

	<i>Substance Use to Cope with Mistreatment</i>					
	<i>Model 1</i>			<i>Model 2</i>		
	<i>RR</i>	<i>95% CL</i>	<i>P-value</i>	<i>RR</i>	<i>95% CL</i>	<i>P-value</i>
Enacted Stigma in Healthcare						
Refused Care	1.73	(1.35, 2.23)	<.0001	1.38	(1.06, 1.79)	.017
Anticipated Stigma in Healthcare						
Delay needed medical care when sick/injured	—	—	—	1.40	(1.06, 1.85)	.016
Delay routine preventive care	—	—	—	1.32	(1.01, 1.73)	.045
Age						
Age 18–24	0.90	(0.73, 1.11)	.317	0.93	(0.75, 1.15)	.478
Age 25–44	Ref			Ref		
Age 45+	0.85	(0.60, 1.20)	.347	0.90	(0.64, 1.28)	.558
Gender Identity						
Binary (Female-to-Male, Trans Man, Transgender Man, Man)	1.05	(0.83, 1.33)	.677	1.03	(0.86, 1.31)	.836
Non-Binary (Other Trans Masculine, Non-Binary, Genderqueer)	Ref			Ref		
Race/Ethnicity						
White (non-Hispanic)	Ref			Ref		
People of Color (POC)	1.09	(0.83, 1.34)	.393	1.06	(0.86, 1.31)	.570
Income						
Low Income	1.48	(1.16, 1.90)	.002	1.40	(1.09, 1.81)	.009
Middle Income	1.61	(1.29, 2.02)	<.0001	1.58	(1.26, 1.98)	<.0001
High Income	Ref			Ref		
Education						
High School Diploma or Less	0.71	(0.51, 0.99)	.047	0.73	(0.52, 1.03)	.073
Some College or Associate's Degree	Ref			Ref		
College Degree	0.79	(0.64, 0.99)	.037	0.78	(0.63, 0.98)	.031
Graduate Degree	0.72	(0.55, 0.93)	.013	0.68	(0.52, 0.88)	.004
Health Insurance						
Private	Ref			Ref		
Public	1.37	(1.03, 1.81)	.029	1.36	(1.07, 1.72)	.034
Uninsured	1.39	(1.10, 1.75)	.007	1.36	(1.11, 1.73)	.011
Medical Gender Affirmation						
Cross-Sex Hormones	1.67	(1.31, 2.15)	<.0001	1.59	(1.24, 2.05)	.0003
Surgical Transition	0.67	(0.52, 0.85)	.001	0.66	(0.51, 0.84)	.0007
Visual Gender Nonconforming Expression						
High	1.46	(1.17, 1.81)	.0009	1.39	(1.11, 1.73)	.004
Moderate	Ref			Ref		
Low	1.06	(0.82, 1.36)	.659	1.06	(0.82, 1.36)	.665
Sexual Orientation						
Gay	0.80	(0.62, 1.03)	.085	0.85	(0.66, 1.09)	.195
Bisexual	0.82	(0.61, 1.09)	.173	0.87	(0.65, 1.16)	.343
Queer	Ref			Ref		
Heterosexual	0.73	(0.56, 0.96)	.025	0.78	(0.71, 1.96)	.074
Geographic Region						
New England/Mid Atlantic	0.81	(0.65, 0.99)	.049	0.80	(0.65, 0.99)	.045
Southern	0.96	(0.73, 1.26)	.775	0.95	(0.72, 1.25)	.715
Midwest/West	Ref			Ref		
California	1.15	(0.87, 1.52)	.315	1.09	(0.82, 1.44)	.547
Data Collection Method						
Online	Ref			Ref		
In-Person Paper	1.17	(0.70, 1.94)	.546	1.18	(0.71, 1.96)	.531

Statistically significant values are highlighted in bold.
RR, risk ratio; CL, confidence limit.

TABLE 2. TRANS MASCULINE RESPONDENTS SELF-REPORTING BY SELF-REPORTED ENACTED STIGMA (REFUSED CARE DUE TO BEING TRANSGENDER AND/OR GENDER NONCONFORMING) (N=2,578)

	<i>Refused Care 14.07%</i>	<i>Not Refused Care 85.93%</i>	<i>Bivariate Comparison</i>	<i>Total Sample</i>	<i>Multivariable Model: Refused Care (yes/no)</i>		
	<i>%</i>	<i>%</i>	<i>P-value</i>	<i>%</i>	<i>RR</i>	<i>95% CL</i>	<i>P-value</i>
Age Range							
Age 18–24	23.39	27.81	.070	27.19	1.06	(0.79, 1.42)	.710
Age 25–44	67.95	62.96	Ref	63.66			
Age 45+	8.66	9.23	.513	9.15	0.67	(0.42, 1.07)	.090
Gender Identity							
Binary (Female-to-Male, Trans Man, Transgender Man, Man)	73.59	48.09	<.0001	51.54	1.09	(0.77, 1.54)	.620
Non-Binary (Other Trans Masculine, Non-Binary, Genderqueer)	27.41	51.91	Ref	48.46			
Race/Ethnicity							
White (non-Hispanic)	67.35	75.47	Ref	74.34	Ref		
People of Color (POC)	32.65	24.53	.002	25.66	1.45	(1.11, 1.90)	.007
Black/African American	3.14	3.95	.733	3.83	—	—	—
American Indian/Alaskan Native	5.68	3.29	.015	3.62	—	—	—
Hispanic/Latino	6.18	4.42	.070	4.67	—	—	—
Other Race/Ethnicity	1.54	3.59	.129	3.30	—	—	—
Multiracial or Mixed Race	16.11	9.28	<.0001	10.24	—	—	—
Income Level							
Low	31.55	30.31	.083	30.48	1.20	(0.85, 1.68)	.300
Middle	39.66	33.96	.011	34.76	1.39	(1.03, 1.88)	.033
High	28.79	35.73	Ref	34.76	Ref		
Educational Attainment							
High School Diploma or Less	7.61	9.56	.089	9.29	0.72	(0.45, 1.16)	.179
Some College or Associate's Degree	41.70	35.52	Ref	36.39	Ref		
College Degree	26.14	33.47	.004	32.44	0.66	(0.49, 0.89)	.007
Graduate Degree	24.54	21.44	.865	21.88	1.00	(0.72, 1.40)	.981
Health Insurance							
Private	62.27	71.53	Ref	70.22	Ref		
Public	18.64	10.61	<.0001	11.74	1.83	(1.28, 2.60)	.0009
Uninsured	19.08	17.87	.185	18.04	1.21	(0.86, 1.69)	.275
Gender Affirmation							
Hormones	80.86	43.52	<.0001	48.77	3.71	(2.56, 5.38)	<.0001
Surgical Transition	61.72	31.43	<.0001	35.69	1.81	(1.34, 2.45)	.0001
Visual Gender Nonconforming Expression							
High	17.54	30.50	.003	28.68	1.01	(0.71, 1.43)	.947
Moderate	44.46	48.24	Ref	47.70	Ref		
Low	38.00	21.26	<.0001	23.62	1.08	(0.80, 1.45)	.626
Sexual Orientation Identity							
Gay	13.68	19.38	.076	18.58	0.83	(0.58, 1.19)	.310
Bisexual	13.79	12.34	.384	12.54	0.89	(0.60, 1.31)	.559
Queer	49.20	51.50	Ref	51.18	Ref		
Heterosexual	23.33	16.77	.010	17.70	0.87	(0.62, 1.22)	.421
Region							
New England/Mid Atlantic	28.90	34.12	.149	33.39	0.89	(0.66, 1.21)	.463
Southern	17.04	14.47	.475	24.83	1.14	(0.80, 1.62)	.482
Midwest/West	39.05	37.39	Ref	37.63	Ref		
California	15.00	14.01	.889	14.15	0.97	(0.66, 1.41)	.871
Data Collection Method							
Online	96.53	97.12	Ref	97.04	Ref		
In-Person Recruited (Paper Survey)	3.47	2.88	.563	2.96	1.00	(0.51, 1.99)	.990

Statistically significant values are highlighted in bold.

TABLE 3. MODELING ANTICIPATED STIGMA IN HEALTHCARE (AVOIDING OR DELAYING CARE) AS A FUNCTION OF ENACTED STIGMA IN HEALTHCARE AMONG TRANS MASCULINE RESPONDENTS (N=2,578)

	<i>Anticipated Stigma in Healthcare</i>					
	<i>Delay Medical Care When Sick/Injured</i>			<i>Delay Routine Preventive Care</i>		
	<i>RR</i>	<i>95% CL</i>	<i>P-value</i>	<i>RR</i>	<i>95% CL</i>	<i>P-value</i>
Enacted Stigma in Healthcare						
Refused Care	5.34	(4.11, 6.93)	<.0001	5.73	(4.33, 7.60)	<.0001
Age						
Age 18–24	0.81	(0.65, 1.01)	.060	0.73	(0.59, 0.91)	.005
Age 25–44	Ref			Ref		
Age 45+	0.58	(0.40, 0.83)	.003	0.58	(0.42, 0.81)	.001
Gender Identity						
Binary (Female-to-Male, Trans Man, Transgender Man, Man)	1.37	(1.07, 1.76)	.012	1.18	(0.93, 1.49)	.172
Non-Binary (Other Trans Masculine, Non-Binary, Genderqueer)	Ref			Ref		
Race/Ethnicity						
White (non-Hispanic)	Ref			Ref		
People of Color (POC)	1.29	(1.04, 1.60)	.023	1.19	(0.97, 1.46)	.089
Income						
Low Income	1.53	(1.20, 1.97)	.0007	1.57	(1.23, 2.00)	.0003
Middle Income	1.18	(0.94, 1.48)	.160	1.26	(1.01, 1.56)	.040
High Income	Ref			Ref		
Education						
High School Diploma or Less	0.68	(0.48, 0.98)	.039	0.66	(0.47, 0.95)	.024
Some College or Associate's Degree	Ref			Ref		
College Degree	0.95	(0.76, 1.19)	.652	1.23	(0.99, 1.54)	.064
Graduate Degree	1.52	(1.17, 1.97)	.002	1.75	(1.36, 2.26)	<.0001
Health Insurance						
Private	Ref			Ref		
Public	1.13	(0.84, 1.52)	.412	1.06	(0.79, 1.42)	.694
Uninsured	1.31	(1.03, 1.68)	.030	1.11	(0.87, 1.41)	.398
Medical Gender Affirmation						
Cross-Sex Hormones	1.58	(1.21, 2.06)	.0007	1.46	(1.14, 1.88)	.003
Surgical Transition	1.09	(0.86, 1.39)	.475	1.20	(0.94, 1.52)	.139
Visual Gender Nonconforming Expression						
High	1.53	(1.22, 1.93)	.0002	1.52	(1.22, 1.88)	.0002
Moderate	Ref			Ref		
Low	1.07	(0.83, 1.37)	0.591	0.93	(0.73, 1.19)	.567
Sexual Orientation						
Gay	0.73	(0.57, 0.95)	0.018	0.60	(0.47, 0.76)	<.0001
Bisexual	0.71	(0.53, 0.96)	0.027	0.52	(0.39, 0.70)	<.0001
Queer	Ref			Ref		
Heterosexual	0.63	(0.48, 0.82)	0.0008	0.54	(0.41, 0.71)	<.0001
Geographic Region						
New England/Mid Atlantic	0.98	(0.79, 1.22)	0.880	1.00	(0.81, 1.24)	.995
Southern	1.05	(0.79, 1.40)	0.743	1.14	(0.87, 1.49)	.329
Midwest/West	Ref			Ref		
California	1.48	(1.12, 1.95)	0.005	1.63	(1.23, 2.15)	.0008
Data Collection Method						
Online	Ref			Ref		
In-Person Paper	1.15	(0.64, 2.07)	0.645	0.85	(0.47, 1.53)	.578

Statistically significant values are highlighted in bold.

injured and delaying routine preventive medical care (see Table 3). In addition, lower income, higher education, cross-sex hormone use, and high visual gender nonconforming expression were each significantly associated with an increased risk of delaying care. Being age 18–24 years or age 45 years

and older compared to age 25–44 years, identifying as gay, bisexual or heterosexual compared to queer, and earning a high school diploma or less versus some college or an associate's degree were each significantly associated with a decreased risk of reporting delays in care.

TABLE 4. ENACTED STIGMA (REFUSED CARE VERSUS NOT), ANTICIPATED STIGMA (DELAYING CARE), AND HEALTH AMONG TRANS MASCULINE RESPONDENTS (N=2,578)

	<i>Refused Care</i> 14.07%	<i>Not Refused</i> <i>Care</i> 85.93%	<i>Bivariate</i> <i>Comparison</i>	<i>Total</i> <i>Sample</i>
	%	%	P-value	%
Anticipated Stigma				
Delay needed medical care when sick or injured	70.27	26.70	<.0001	32.83
Delay routine preventive care	75.62	33.09	<.0001	39.07
Health				
Substance use to cope with mistreatment	39.66	25.63	<.0001	27.60

Statistically significant values are highlighted in bold.

Refusal of care, delaying care, and risk for substance use to cope

More than one-quarter (28%) of the sample reported substance use to cope with healthcare mistreatment. As shown in Table 4, the proportion of respondents who endorsed substance use to cope was higher for those who reported *enacted* stigma versus not (40% vs. 26%, respectively; $P < .001$). In adjusted models, *enacted* stigma was associated with substance use to cope (Model 1, Table 1). Factors associated with a statistically significant increased risk of substance use were: low and middle income versus high income; high school diploma and college and graduate degree versus some college or an associate's degree; public health insurance and being uninsured each compared to private insurance; cross-sex hormones; surgical gender affirmation; high versus low visual gender nonconforming expression; and heterosexual versus queer identity.

When adding *anticipated* stigma to the model, the relation between *enacted* stigma and substance use was attenuated (Model 2, Table 1). Direct effects of *anticipated* stigma with substance use were also found, for delaying needed care when sick/injured and delaying routine preventive care. After adding *anticipated* stigma to the model, having a high school diploma or less (versus some college or an associate's degree), and being heterosexual (versus queer) were no longer significant predictors of using substances to cope with mistreatment.

Discussion

This study represents a novel approach to examining the social psychological processes through which stigma influences health and healthcare utilization among trans masculine adults vis-à-vis *enacted* and *anticipated* stigma. By testing *enacted* and *anticipated* stigma in the same model, we were able to examine the joint influence of these factors in maladaptive coping such as substance use. More than 1 in 4 respondents (27.6%) in this sample reported substance use. Thus, consistent with prior literature, this sample suggests that substance use is a serious public health issue for FTM trans masculine individuals in the U.S. Substance use has been shown to be highly associated with other adverse health outcomes that confer significant morbidity and mortality, such as poor mental health,¹⁹ chronic disease,²⁰ and infectious disease.²¹ The association between both *enacted* and *anticipated* stigma in healthcare settings with substance use to cope with mistreatment adds to the existing body of literature showing a relationship between gender minority stress and negative health outcomes in transgender people.

We found that more than 1 in 10 trans masculine respondents experienced healthcare refusal by a provider in their lifetime due to being transgender and/or gender nonconforming. More than one third of the sample reported delaying needed care when sick/injured and delaying routine preventive care due to fear of gender-based discrimination. Further, *enacted* stigma in healthcare was associated with an increased risk of substance use to cope with mistreatment. Delaying needed and routine preventive care—markers of *anticipated* stigma—were also associated with substance use to cope with mistreatment. Interestingly, although the risk of substance use as a coping mechanism for mistreatment declined nearly 50% after statistically adjusting for delaying needed and preventive care (*anticipated* stigma), our data reveal that the risk of substance use as a coping mechanism was still significant over and above the risk statistically predicted by *anticipated* stigma. These findings suggest that delays in seeking needed or routine preventive care may arise from actual experiences of discrimination and rejection of medical care from clinical providers. As such, the provision of culturally competent education to healthcare providers must be incorporated into healthcare training programs, while simultaneously illuminating the ethical standards and deleterious consequences for refusing care to transgender people in order to ensure all people receive needed healthcare.

Importantly, we found critical patterns of *enacted* and *anticipated* stigma by key social population-level determinants of health, including race/ethnicity, income, education, and health insurance status. First, people of color were more likely to report having been refused care due to being transgender and/or gender nonconforming; these participants were also subsequently more likely to delay needed medical care when sick/injured.²² Second, consistent with health services research over the past two decades,²³ participants in this study who reported lower incomes were also more likely to have been refused care or delay care due to being transgender or gender nonconforming. The patterns in the current study not only emphasize further the current national disparity for those who delay needed care, but suggest that those who are the most marginalized and most in need of care end up without the care they ultimately need. Moreover, this study adds to the current literature on consumer's avoidance of care, illustrating that *enacted* stigma on the part of healthcare providers and medical systems is a key determinant of disparities in healthcare utilization.

Another noteworthy finding is that gay, bisexual, and heterosexual sexual orientation groups had decreased risk of stigma and substance use compared to "queer" FTM trans

masculine respondents. In addition, high visual gender nonconforming expression was associated with *anticipated* stigma and with substance use, but not with *enacted* stigma. Binary identification versus non-binary identification was associated with increased risk of delaying needed medical care when sick/injured, but not with delaying routine preventive care. Sexual and gender identity labels have a corresponding social value of privilege or disadvantage.²⁴ Many transgender and gender nonconforming individuals may reject or rework traditional gender identity and sexual orientation labels, such as queer.²⁵ Given their experiences transgressing societal norms surrounding sex, gender identity and expression, and/or sexual roles and behaviors, trans masculine people who identify as queer may be more aware of and therefore also hypervigilant of gender-based discrimination. Given the large proportion (51.2%) of trans masculine respondents who endorsed the queer umbrella and non-binary sexual identities in this study, more research is needed to understand the intersections between gender and sexual minority statuses, including non-binary identifications.

Interestingly, while cross-sex hormone use was associated with increased substance use, surgical gender affirmation was associated with decreased risk of substance use. Explanations of this inverse pattern are still mostly associational, but emerging research on gender affirmation suggests that while hormonal interventions are an often-sought and first step option for transgender individuals seeking to medically transition, surgical gender affirmation offers an additional level of self-authentication that may be an additional protective health factor.^{26,27} Additional research also supports the medical transition process as a significant predictor of increased quality of life.²⁸ Thus, any intervention that enhances gender affirmation, that is, any action or process that increases the opportunity to be affirmed in one's gender identity through social interaction,²⁷ may also increase positive health outcomes. Future research should examine the protective role of gender affirmation in both resilience and health outcomes research.

This study has several noteworthy limitations. First, substance use was subjectively self-reported without the benefit of clinical and/or diagnostic evaluation of substance use. Second, these data are cross-sectional. We make the assumption that *enacted* stigma occurred prior to *anticipated* stigma but anticipated stigma may occur prior to or in conjunction with enacted stigma. Third, this study does not statistically adjust for concurrent mood disorders such as depression or anxiety, which could be potential confounders. For example, psychological distress may be associated with increased reporting of discrimination and substance use, and psychological distress including depression and suicide are reported in trans masculine samples.²⁹ The lack of assessment of depression, anxiety, post-traumatic stress disorder (PTSD), and other potential co-morbid mental health concerns and conditions represents an important limitation of this study. There are likely other contributing factors to *anticipated* stigma other than *enacted* stigma, just as there are likely many factors involved in substance use other than stigma. Identifying the other mechanisms and contributing factors, including those that may be trans masculine-specific, represents a direction for future research. Fourth, this study did not have a direct measure of *felt* stigma. We used delaying care as a proxy for *anticipated* stigma but individuals may avoid care for a variety of other reasons. While we believe that avoiding care is a form

of *anticipated* stigma, future research is warranted with more precise measurement to understand whether delaying care is a result of anticipating rejection. Further, research is needed to understand whether anticipation of stigma is based on real or imagined experiences of rejection. Anticipated stigma may be a result of actual experiences of *enacted* stigma. However, it may also result from hearing about the stigmatization of other transgender people, what we might term *vicarious* stigma (e.g., experiencing stigma by proxy through empathic engagement and/or norms surrounding fears of experiencing discrimination within the transgender community).

The limitations of this study lend weight to the need for more sophisticated investigations designed to understand the nuanced link between stigma and substance use, including longitudinal prospective studies to assess temporality of *enacted* and *anticipated* stigma, trajectories of substance use over time in relation to healthcare utilization and healthcare-seeking behaviors, and assessment of other mental health issues alongside stigma and substance use that may be relevant for clinical interventions. Despite these limitations, this study suggests that stigma processes are linked to healthcare utilization in trans masculine individuals. This is particularly important as healthcare is recommended by the U.S. Preventive Services Task Force as a setting for screening and brief behavioral interventions for substance use.^{8,9} With the arrival of the Affordable Care Act (ACA), there is now a legal federal framework for state and local healthcare systems (public and private alike) to provide a near-universal guarantee of affordable healthcare coverage and access regardless of individual differences. A central tenant of the ACA is to improve the fairness, quality, and affordability of health insurance coverage.

The results of this study suggest that FTM trans masculine consumers may be delaying needed care and routine preventive care as a consequence of *enacted* stigma. Further, trans masculine consumers are turning to substance use to cope with the stigma experienced in healthcare settings. By beginning to uncover the social psychological mechanisms through which stigma influences healthcare utilization for trans masculine people, researchers, practitioners and policy-makers can intervene to increase cultural competence in clinical settings and healthcare delivery systems.

Conclusions

Gender minority stressors in healthcare settings, particularly *enacted* and *anticipated* stigma, represent important contextual factors influencing healthcare utilization and health behaviors for trans masculine people. Stigma-related processes necessitate integration into substance use prevention and intervention efforts with this underserved population.

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