

ORIGINAL ARTICLE

Evolving Primary Care Utilization of Transgender and Gender-Nonconforming People at a Community Sexual Health Clinic

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Abstract

Purpose: Prior research has found that transgender people are less likely to have access to health care and health insurance than their cisgender peers and are more likely to delay seeking care due to systemic discrimination and stigma. To this end, this study seeks to measure transgender and gender-nonconforming (TGNC) clients' primary care utilization and compare them to their cisgender peers.

Methods: Demographic data and self-reported primary care utilization from 14,372 clients attending a community health center in Los Angeles, CA, from 2018 to 2020 were examined. Descriptive statistics and multivariable regression analyses were used to examine correlates of gender identity on primary care utilization metrics—Hepatitis A, Hepatitis B, and Human Papillomavirus (HPV) vaccinations and recent primary care visits.

Results: Of TGNC clients, 38.0% reported being vaccinated for Hepatitis A compared to 49.2% of cisgender clients ($p < 0.01$) and 42.6% reported being vaccinated for Hepatitis B compared to 51.6% of cisgender clients ($p < 0.01$). TGNC clients had higher odds of engaging with the HPV vaccination series than their cisgender peers (adjusted odds ratio [aOR] = 1.28, 95% confidence interval [CI] 1.03–1.59). TGNC clients had higher odds of seeing their primary care provider within the preceding 2 years (aOR = 1.72, 95% CI 1.01–2.93) compared to non-TGNC clients.

Conclusions: This study's results found that TGNC clients were more likely to access certain primary care services more often than their cisgender counterparts. Our results support the efficacy of such interventions, such as a health care setting designed to support the health of gender minority people, and see similar, if not greater, primary care engagement in transgender persons compared to their cisgender peers.

Keywords: access to care; gender identity; health disparities; transgender

Introduction

Recent estimates indicate that over 1,300,000 individuals in the United States identify as transgender.¹ Transgender people face health disparities limiting their access to and engagement in primary care.² Statistically, they are less likely to have access to culturally sensitive comprehensive care and health insurance than their cisgender peers.³ In addition, 33% of transgender individuals are estimated to delay seeking care due to systemic discrimination and stigma, regardless of insurance status or accessibility of care.⁴ Therefore, as a

major factor in health equity, transgender people's access to and engagement in care must be addressed to end the perpetuation of these health disparities.³

Typical primary care quality metrics include age- and anatomy-appropriate cancer screening and immunization status. These metrics can be considered representative markers of engagement in primary disease prevention in adult patients.^{5,6} Nevertheless, metrics on sexual orientation and gender identity minority people's engagement in primary care is broadly constrained by limitations in collecting demographic data

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on sexual orientation and gender identity.⁷ Few studies have sought to specifically explore this, with most published work related to transgender populations focused predominantly on transition-related care, including gender-affirming hormone care, health care disparities and discrimination, sexual health, including human immunodeficiency virus (HIV), and gender-affirmative surgical options and technique.^{8–12} Furthermore, existing data do not adequately address variability within transgender and gender-nonconforming (TGNC) subpopulations (transmasculine vs. transfeminine vs. genderqueer/nonbinary).¹²

Existing data, however, do appear to reinforce the negative impact that health disparities generally faced by transgender people have upon their engagement with primary care. Kiran et al. report lower rates of breast (33% vs. 65%), cervical (56% vs. 72%), and colorectal (55% vs. 70%) cancer screenings in eligible transgender patients compared to cisgender persons.¹⁰ A survey by Bednarczyk et al. also suggests disparities related to vaccine receipt among transgender populations for human papillomavirus (HPV) vaccination. They found that ~41.9% of trans men and 5.3% of trans women were vaccinated in a study population of eligible trans-identifying patients.¹³ This finding is particularly salient given that transgender women have high rates of HPV infection, with one study reporting a prevalence of 84.1% among transgender women compared to 54.6% of cisgender men who have sex with men.¹⁴

In addition, analyses have found that Hepatitis A and B vaccination rates among transgender patients vary from 10% to 30%; however, this variation limits comparisons to cisgender patients as these studies have been descriptive and used moderate sample sizes.^{15,16} Moreover, there is no known literature solely focusing on gender-nonconforming and nonbinary people's primary care engagement. Overall, while existing data seem to substantiate lack of access to primary and preventative health care, further information is needed to fully address the degree of these disparities among and within TGNC populations in an effort to design optimal engagement strategies.

This study seeks to add to the existing literature by comparing indicators of primary care utilization among TGNC patients and their cisgender counterparts. First, this study aims to estimate the proportion of TGNC people who self-report having HPV vaccinations, Hepatitis A/B vaccinations, and breast/chest and cervical cancer screenings among clients receiving care

at a community clinic in Los Angeles, California. Second, this study will look at differences in these primary care metrics between TGNC and cisgender clients. Third, this study will identify significant correlates of primary care utilization and engagement among TGNC people.

Methods

Study population and design

The Los Angeles LGBT Center (“the Center”) is a federally qualified health center headquartered in the Hollywood neighborhood of Los Angeles. The Center's Sexual Health and Education Program offers the clients free and low-cost sexual health services, including HIV/sexually transmitted infection testing at the main location as well as a satellite location in West Hollywood, CA. Each client completes a self-administered electronic sexual health risk assessment to collect demographics, sexual behavior, and general health information at their visit or up to 4 days before their visit via an online health portal.

Our study population included all clients receiving sexual health services from November 2018 to February 2020. Clients were included in this study if they were (1) 18 years of age or older and (2) had completed a sexual health risk assessment. Clients only complete a full risk assessment every 6 months; for interim visits, clients receive an abbreviated assessment with questions regarding their last sexual encounter only. Clients were not included if they visited the Center for routine care or follow-up visits where they did not complete a full sexual health risk assessment.

Overall, 14,395 clients visited the Center from November 2018 to February 2020, but two were excluded because they were younger than 18 at the time of care. For clients who completed more than one sexual health risk assessment during the study period, the most recent assessment was used for this analysis, resulting in a final sample size of 14,372. The Los Angeles County Department of Public Health Institutional Review Board (2020-07-882) provided expedited review and a waiver of informed consent since this study is cross sectional looking at existing, de-identified medical records and presented no more than minimal risk. Demographic data were extracted from electronic medical records. Primary care indicators, including self-reported vaccination status (Hepatitis A, Hepatitis B, HPV), cancer screenings (cervical Pap smear, mammogram), and primary care provider (PCP) engagement, were extracted from sexual health risk assessments.

Variable classification

Gender identity was dichotomized as TGNC (trans men, trans women, genderqueer, gender nonconforming, gender nonbinary) or non-TGNC (cis men and cis women). Self-reported cancer screening (cervical Pap smear and Mammogram/breast examination) responses (for clients who met the screening criteria) were recoded to dichotomous variables (ever screened vs. not screened). Clients were designated as needing a cervical Pap smear if they were assigned female at birth, were between 21 and 65 years of age, did not report having a hysterectomy or ovariectomy, and did not reporting having a cervical Pap smear within 3 years per the American College of Obstetricians and Gynecologists (ACOG) recommendations.¹⁷

Clients were designated as needing a breast cancer screening if they identified as a trans woman/trans man or indicated they were assigned female at birth, were at least 50 years of age, and did not report having a breast cancer screening within 3 years per the ACOG recommendations.¹⁸ Any client's responses who selected "decline to answer" for the aforementioned variables were considered missing for the following study. "Ever screened" included clients who responded, "I have had an exam more than three years ago" or "I have had an exam in the past three years." "Not screened" included clients who responded, "I believe I need an exam but have never been screened," and "I do not believe I need an exam and have never been screened." Vaccination status (Hepatitis A/B, HPV) responses were recoded to dichotomous variables (vaccinated/engaged vs. not vaccinated). "Vaccinated/Engaged" included clients who responded "Vaccinated" and "In Progress." "Not vaccinated" included clients who responded, "Not Vaccinated." Primary care engagement was defined as having a primary care doctor and having seen a primary care doctor for at least one routine visit within the last 2 years.

Statistical analyses

Descriptive statistics were generated for demographic variables, including age, sexual orientation, race/ethnicity, smoking status, and housing status. Pearson's chi-square, Student's *t* tests, and Fisher's exact tests were used to examine differences between TGNC and non-TGNC clients on demographic variables. Crude logistic regressions were used to determine if TGNC and non-TGNC status was associated with vaccination and PCP engagement. Using *a priori* methods to select aforementioned demographic and confounding vari-

ables, multivariable logistic regression models were built for each of the following four primary care indicators: a primary care visit in the preceding 2 years, Hepatitis A vaccination, Hepatitis B vaccination, and HPV vaccination.^{19–23} Race/ethnicity was specifically included to adjust for systemic racism and sociopolitical factors as well as focus on health disparities for TGNC women of color.¹⁹ Cancer screenings were not included in multivariable analyses due to insufficient sample sizes. Missing data were deemed missing at random in our sample and may be dependent on our exposure (gender-identity) and demographic variables. However, control for these variables in the multivariable analyses adjusts (or controls) for missing data.²⁴ All statistical analyses used an alpha level of 0.05. All data analyses were conducted using SAS software Version 9.4 of the SAS System for Windows (SAS Institute, Inc., Cary, NC).

Results

Study population

Overall, 14,372 clients were included in the study (Table 1). The majority (57.5%) were cisgender gay/homosexual men, 8.9% straight/heterosexual men, 5.2% straight/heterosexual women, 3.5% bisexual women, and 3.2% TGNC people. Of the 458 TGNC clients in the study population, 50.7% identified as genderqueer/nonbinary, 38.2% identified as transgender women/trans feminine, and 11.1% identified as transgender men/trans masculine. Overall, more than half the study population was over the age of 30, but 64.4% of TGNC clients were under the age of 30. The study population was ethnically and racially diverse: 39.5% white, 30.7% Hispanic/Latinx, 8.0% Asian/Pacific Islander, and 7.9% black/African-American. Approximately 3.0% reported being homeless, and 14.3% reported being a current smoker (data not shown).

Hepatitis A vaccinations, hepatitis B vaccinations, and cancer screenings

Overall, 48.8% of clients reported being vaccinated for Hepatitis A. Of the 458 TGNC clients, 38.0% reported being vaccinated for Hepatitis A compared to 49.2% of cisgender clients ($p < 0.01$). Half of the overall population (51.3%) reported being vaccinated for Hepatitis B. Of TGNC clients, 42.6% reported being vaccinated for Hepatitis B compared to 51.6% of cisgender clients ($p < 0.01$). Looking at clients who needed a cervical Pap smear, 56.8% reported having had one within 3 years, but 15.2% declined to answer (Table 1). Of all

Table 1. Demographics of Unique Center Clients, November 2018–February 2020 (N= 14,372)

	TGNC ^c						Non-TGNC		p
	Total sample n (column %)	Genderqueer/ nonbinary	Trans man	Trans woman	Female	Male	n (column %)		
		n (column %)	n (column %)	n (column %)	n (column %)	n (column %)			
Age								< 0.0001	
18–24	2,477 (17.2)	75 (32.3)	19 (37.3)	36 (20.6)	505 (28.1)	1,833 (15.6)			
25–29	4,164 (29.0)	85 (36.6)	22 (43.1)	58 (33.1)	584 (32.5)	3,404 (28.2)			
30–39	4,663 (32.4)	57 (24.6)	7 (13.7)	45 (25.7)	493 (27.4)	4,043 (33.5)			
40–49	1,549 (10.8)	10 (4.3)	2 (3.9)	25 (14.3)	127 (7.1)	1,382 (11.4)			
50+	1,117 (7.8)	3 (1.3)	1 (2.0)	5 (2.9)	48 (2.7)	1,056 (8.7)			
Unknown/unreported	402 (2.8)	2 (0.9)	0 (0.0)	6 (3.4)	39 (2.2)	355 (2.9)			
Sexual orientation								< 0.0001	
Gay/homosexual	8,360 (58.2)	47 (20.3)	2 (3.9)	22 (12.6)	11 (0.6)	8,267 (68.5)			
Lesbian	106 (0.7)	3 (1.3)	0 (0.0)	1 (0.6)	100 (5.6)	1 (0.0)			
Bisexual	1,922 (13.4)	22 (9.5)	10 (19.6)	14 (8.0)	507 (3.5)	1,364 (11.3)			
Heterosexual	2,113 (14.7)	2 (0.9)	11 (21.6)	77 (44.0)	749 (41.7)	1,273 (10.5)			
Other	203 (1.4)	29 (12.5)	11 (21.6)	24 (13.7)	28 (1.6)	107 (0.9)			
Pansexual	177 (1.2)	30 (12.9)	4 (7.8)	8 (4.6)	63 (3.5)	71 (0.6)			
Queer	223 (1.6)	69 (29.7)	6 (11.8)	8 (4.6)	61 (3.4)	78 (0.6)			
Questioning	158 (1.1)	4 (1.7)	1 (2.0)	6 (3.4)	44 (2.4)	103 (0.9)			
Unknown/unreported/declined	1,110 (7.7)	26 (11.2)	61 (11.8)	15 (8.6)	233 (13.0)	809 (6.7)			
Race/ethnicity								< 0.0001	
American Indian or Alaska Native	38 (0.3)	2 (0.9)	0 (0.0)	0 (0.0)	7 (0.4)	29 (0.2)			
Asian/PI	1,154 (8.0)	22 (9.5)	1 (2.0)	24 (13.7)	156 (8.7)	944 (7.8)			
Black or African American	1,139 (7.9)	14 (6.0)	4 (7.8)	21 (12.0)	176 (9.8)	920 (7.6)			
Hispanic	4,414 (30.7)	82 (35.3)	18 (35.3)	82 (46.9)	381 (21.2)	3,839 (31.8)			
White	5,679 (39.5)	77 (33.2)	22 (43.1)	32 (18.3)	753 (41.9)	4,789 (39.7)			
Other	1,039 (7.2)	17 (7.3)	3 (5.9)	7 (4.0)	164 (9.1)	843 (7.0)			
Unknown/unreported	909 (6.3)	18 (7.8)	3 (5.9)	9 (5.1)	159 (8.9)	709 (5.9)			
Homeless status								< 0.0001	
Homeless	437 (3.0)	20 (8.6)	5 (9.8)	33 (18.9)	41 (2.3)	334 (2.8)			
Not homeless	12,930 (90.0)	190 (81.9)	44 (86.3)	125 (71.4)	1,619 (90.1)	10,921 (90.5)			
Unknown/unreported	1,005 (7.0)	22 (9.5)	2 (3.9)	17 (9.7)	136 (7.6)	818 (6.8)			
Total	14,372	232	51	175	1,796	12,073			
Pap smear < 3 years (of clients who need one)^a								< 0.0001	
Yes	1,071 (56.8)	38 (42.7)	21 (45.7)	—	1,009 (57.7)	—			
No	527 (28.0)	33 (37.1)	19 (42.2)	—	416 (25.4)	—			
Unknown/declined	286 (15.2)	18 (20.2)	5 (10.9)	—	229 (14.0)	—			
Breast cancer screening < 3 years (of clients who need one)^b								< 0.0001	
Yes	54 (50.5)	0 (0.0)	0 (0.0)	1 (5.6)	53 (60.2)	—			
No	29 (27.1)	0 (0.0)	1 (100.0)	7 (38.9)	21 (23.9)	—			
Unknown/declined	24 (22.4)	0 (0.0)	0 (0.0)	10 (55.6)	14 (15.9)	—			
Hepatitis A								< 0.0001	
Vaccinated/engaged	7,016 (48.8)	85 (36.6)	18 (35.3)	71 (40.6)	735 (40.9)	6,094 (50.5)			
Not vaccinated	6,924 (48.2)	140 (60.3)	31 (60.8)	89 (50.9)	986 (54.9)	5,652 (46.8)			
Unknown/declined	432 (3.0)	7 (3.0)	2 (3.9)	15 (8.6)	75 (4.2)	327 (2.7)			
Hepatitis B								< 0.001	
Vaccinated/engaged	7,367 (51.3)	98 (42.2)	22 (43.1)	75 (42.9)	789 (43.9)	6,369 (52.8)			
Not vaccinated	6,606 (46.0)	129 (55.6)	27 (52.9)	90 (51.4)	944 (52.6)	5,391 (44.7)			
Unknown/declined	399 (2.8)	5 (2.2)	2 (3.9)	10 (5.7)	63 (3.5)	313 (2.6)			
HPV vaccine								< 0.001	
Vaccinated/engaged	3,941 (27.4)	90 (38.8)	30 (58.8)	39 (22.3)	698 (38.9)	3,075 (25.5)			
Not vaccinated	9,948 (69.2)	138 (59.5)	19 (37.3)	119 (68.0)	1,023 (57.0)	8,619 (71.4)			
Unknown/declined	483 (3.4)	4 (1.7)	2 (3.9)	17 (9.7)	75 (4.2)	379 (3.1)			
PCP								< 0.01	
Yes	4,983 (34.7)	76 (32.8)	35 (68.6)	78 (44.6)	528 (29.4)	4,252 (35.2)			
No	7,995 (55.6)	133 (57.3)	12 (23.5)	82 (46.9)	1,087 (60.5)	6,654 (55.1)			
Unknown/declined	1,394 (9.7)	23 (9.9)	4 (7.8)	15 (8.6)	181 (10.1)	1,167 (9.7)			
PCP visit < 2 years (of clients who have a PCP)								0.43	
Yes	4,360 (87.5)	65 (85.5)	33 (94.3)	72 (92.3)	441 (83.5)	3,738 (87.9)			
No	589 (11.8)	11 (14.5)	2 (5.7)	6 (7.7)	85 (16.1)	482 (11.3)			
Unknown/declined	34 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)	2 (0.4)	32 (0.8)			
Total	14,372	232	51	175	1,796	12,073			

^aComparison of TGNC and Cisgender clients who met the recommendations for needing a Pap Smear.

^bComparison of TGNC and Cisgender clients who met the recommendations for needing a Breast Cancer screening.

^c45 out of 14,372 clients did not report gender identity, so row totals might not add up to the corresponding total sample. HPV, human papillomavirus; PCP, primary care provider; TGNC, transgender and gender-nonconforming.

Table 2. Correlates of Human Papillomavirus Vaccinations and Primary Care Visitations November 2018–February 2020

	HPV vaccination (n=11,927) ^a				PCP visit (n=4,372) ^a			
	cOR	95% CI	aOR	95% CI	cOR	95% CI	aOR	95% CI
Gender identity (ref=Non-TGNC)								
TGNC	1.47	1.21–1.80	1.28	1.03–1.59	1.21	0.75–1.97	1.72	1.01–2.93
Race/ethnicity (ref=White)								
American Indian or Alaska native	0.97	0.47–2.02	1.07	0.49–2.36	0.40	0.09–1.91	0.37	0.08–1.75
Asian/PI	1.09	0.95–1.26	0.96	0.83–1.12	0.67	0.49–0.92	0.69	0.50–0.96
Black or African American	1.23	1.07–1.42	1.03	0.89–1.20	0.59	0.43–0.82	0.66	0.46–0.94
Hispanic	1.02	0.93–1.11	0.88	0.80–0.97	0.55	0.45–0.67	0.61	0.49–0.76
Other	1.17	1.01–1.36	0.99	0.85–1.16	0.75	0.51–1.09	0.90	0.60–1.36
Age (ref=18–24)								
25–29	0.70	0.63–0.78	0.71	0.64–0.80	1.19	0.93–1.52	1.16	0.90–1.50
30–39	0.34	0.31–0.38	0.35	0.31–0.39	1.62	1.27–2.07	1.68	1.30–2.18
40–49	0.24	0.21–0.28	0.25	0.21–0.29	2.56	1.81–3.62	2.29	1.60–3.28
50+	0.18	0.15–0.22	0.18	0.15–0.23	4.04	2.67–6.10	3.40	2.21–5.22
Homeless status (ref=not homeless)								
Homeless	0.90	0.72–1.12	0.83	0.66–1.06	0.86	0.51–1.45	1.01	0.57–1.78

^aSample sizes differ across outcome since some clients did not self-report all outcomes. aOR, adjusted odds ratio; CI, confidence interval; cOR, crude odds ratio.

clients who needed a breast cancer screening, 50.5% reported having had one within 3 years, but 22.4% declined to answer.

HPV vaccination

Overall, 27.4% of clients reported engaging with the HPV vaccination series. About one-third of TGNC clients (34.7%) reported engaging with the HPV vaccination series compared to 27.2% of cisgender clients. In both the bivariate and multivariable models, TGNC people had higher odds of engaging with the HPV vaccination series than their cisgender peers (crude odds ratio [cOR] = 1.47, 95% confidence interval [CI] = 1.21–1.80) (adjusted odds ratio [aOR] = 1.28, 95% CI 1.03–1.59). In addition, in the

multivariable model, HPV vaccination was also associated with age. Compared to 18–24-year-old clients, clients aged 25 and older had lower odds of engaging with the HPV vaccination series (Table 2). In addition, this study separately analyzed clients based on assigned sex at birth.¹³ In both the bivariate and multivariable models, TGNC clients assigned female at birth had higher odds of engaging with the HPV vaccination series than the cisgender counterparts (cOR = 1.62, 95% CI = 1.15–2.27) (aOR = 1.54, 95% CI = 1.04–2.28). On the other hand, TGNC clients assigned male at birth did not have different odds of engaging with the HPV vaccination series compared to their cisgender counterparts (Table 3).

Table 3. Correlates of Human Papillomavirus Vaccination by Sex Assigned at Birth November 2018–February 2020

	Clients assigned female at birth (n=1,554)				Clients assigned male at birth (n=10,368)			
	cOR	95% CI	aOR	95% CI	cOR	95% CI	aOR	95% CI
Gender identity (ref=non-TGNC)								
TGNC	1.62	1.15–2.27	1.54	1.04–2.28	1.14	0.88–1.48	0.98	0.74–1.30
Race/Ethnicity (ref=White)								
American Indian or Alaska Native	0.30	0.04–2.56	0.43	0.04–4.32	1.20	0.55–2.60	0.31	0.56–3.01
Asian/PI	1.26	0.89–1.76	1.15	0.79–1.67	1.06	0.91–1.24	0.94	0.80–1.11
Black or African American	1.13	0.81–1.58	0.86	0.60–1.23	1.24	1.06–1.45	1.08	0.91–1.28
Hispanic	1.08	0.84–1.38	0.89	0.68–1.17	1.05	0.95–1.16	0.92	0.83–1.02
Other	1.39	0.99–1.94	1.13	0.78–1.64	1.11	0.94–1.31	0.96	0.80–1.14
Age (ref=18–24)								
25–29	1.09	0.86–1.38	1.12	0.87–1.44	0.67	0.59–0.75	0.68	0.60–0.77
30–39	0.37	0.28–0.47	0.36	0.27–0.48	0.36	0.32–0.41	0.36	0.32–0.41
40–49	0.07	0.03–0.14	0.07	0.03–0.15	0.28	0.24–0.34	0.29	0.24–0.34
50+	0.08	0.03–0.24	0.08	0.03–0.23	0.20	0.16–0.25	0.20	0.16–0.25
Homeless status (ref=not homeless)								
Homeless	0.93	0.53–1.64	1.07	0.55–2.08	0.91	0.71–1.16	0.81	0.63–1.06

PCP visit within last 2 years

Of all clients, 30.3% reported seeing their PCP in the preceding 2 years. Of the 189 TGNC clients who had a PCP, 89.9% reported having seen their provider in the preceding 2 years compared to 87.4% of cisgender clients with a PCP. In the bivariate model, TGNC clients did not have different odds of seeing their PCP within the preceding 2 years (cOR=1.21, 95% CI=0.75–1.97). In the multivariable model, TGNC clients had higher odds of seeing their PCP within the preceding two years aOR=1.72, 95% CI 1.01–2.93) compared to non-TGNC clients.

Discussion

Overall, our findings challenge preceding notions that gender identity is the main factor driving the health inequities between TGNC people and their cisgender counterparts. A large proportion of TGNC clients reported having received Hepatitis A/B vaccinations and a PCP visit within the last 2 years. In addition, TGNC people not currently taking gender-affirming hormones were just as likely as cis people to have a PCP visit within the last 2 years (data not shown). Our study reports higher rates of Hepatitis A and B vaccinations (38.0% and 42.6%, respectively) among transgender populations compared to previous reported ranges of 10% to 30%.^{15,16} Moreover, this study's results suggest that TGNC clients might utilize certain primary care services more often than their cisgender counterparts. In fact, after accounting for covariates, race/ethnicity was the only variable significantly associated with primary care engagement even though TGNC and non-TGNC clients significantly differed in homeless status. These findings call into question whether or not TGNC people are truly less likely to engage in primary care and also suggest that other societal factors are related to low primary care engagement. Furthermore, they suggest that gender identity might not even be a suitable or sufficiently defined exposure variable considering the effects of other socioeconomic factors.²⁵

Previous analyses address that the major determinants resulting in TGNC people's overall lack of health care engagement include fear of discrimination, lack of provider knowledge regarding the health care needs of trans-identified individuals, and stigmatization/social marginalization of gender minority people.^{26,27} Furthermore, office environments perceived as "unfriendly" to TGNC patients promote barriers to adequate access to care.²⁸ This is true for TGNC racial and ethnic minority people, especially trans women who dispro-

portionately report a history of homelessness, violence, and incarceration, all of which further contribute to a fear of discrimination in public accommodations, including health care settings.^{29,30} To overcome these obstacles, researchers engaged in understanding these barriers to care for TGNC patients have called for the institution of interventions that promote and establish discrimination-free health care environments.³¹ Our results support the efficacy of such interventions as the Center, a health care setting designed to support the health of gender minority populations, sees similar primary care engagement in transgender persons compared to their cisgender peers.

On the contrary, research in TGNC resilience offers potential explanations for how TGNC people thrive despite systemic injustices. Recent research has argued that the LGBTQ research base in general should shift away from deficit-focused efforts and toward strengths-based approaches such as a resilience framework in order inform better health interventions.³² The Resilience Activation Framework demonstrates how TGNC people access and use individual and community-level resources to seek and receive health care.³³ Given that transgender people are more likely to experience socioeconomic disadvantages, this framework provides another possible explanation for the parity between TGNC and cisgender clients in our study.³⁴ In this sense, TGNC clients demonstrate resilience because they are able to access the Center's resources (i.e., health care) due to the Center's ability to offer low cost, sliding scale services, community outreach, housing services, and general social support services.

Finally, current trends in medical education include cultural sensitivity modules on LGBTQ health to teach providers how to care for LGBTQ patients and create welcoming practices. Many providers report not knowing enough about LGBTQ health to care for their patients, so this is an important gap to address.^{35–37} Nevertheless, these current efforts in medical education/continuing education might not be enough to increase primary care engagement because of medical institutions' historical mistreatment of TGNC people regarding health care, lack of access to care, and systemic injustices.^{38,39} To combat these primary care engagement inequities effectively, health professionals should consider programmatic efforts to increase resilience among TGNC populations in addition to increasing provider cultural sensitivity.

Limitations

This study has several limitations. Our results may not be generalizable to other populations since it was conducted at a single urban sexual health clinic. Specifically, our study may have selection bias induced by uncontrolled confounding that would cause our results to be more conservative than the true value. The Center's TGNC clients might engage in primary care more often than the general TGNC population, especially since the Center has the capacity to refer clients to TGNC-friendly providers outside of the Center. Furthermore, we could not determine when clients received Hepatitis A/B vaccinations, so primary care engagement would not be necessarily related to vaccination if they received them as children. Moreover, for clients over 30, our classification may underestimate the number of clients who have engaged in primary care, in terms of cervical Pap screening, since some clients may be receiving a Pap/HPV test per the 5-year screening schedule.

In addition, a majority of clients did not provide health insurance information or income, so we were unable to account for these socioeconomic factors in the multivariable models. This study was not able to examine diverse gender identities under the TGNC umbrella due to small sample sizes, so we could not examine differences across TGNC subpopulations. In addition, all outcomes were self-reported and are subject to recall bias, but likely nondifferential across TGNC and non-TGNC populations. Moreover, this analysis could not thoroughly identify clients who need a breast cancer screening since the Center asks clients if they had a screening within the past 3 years as opposed to ACOG's 2-year recommendation.

Future directions

Future research should move away from using gender identity as an exposure variable and should focus on variables such as insurance status to further explore how multiple systems, including racism, smoking, homelessness, etc., are related to barriers to primary care engagement. Future research should also examine if there are differences in primary care engagement among TGNC subpopulations such as gender nonconforming and nonbinary people since these individuals are understudied in health research. Finally, future research should analyze these health inequities in primary care by using a resilience framework to explore increasing resilience as a potential public health solution.

Conclusion

By using a different framework, future TGNC research efforts can move past examining gender identity as the main factor for these health inequities. Health interventions to increase primary care engagement among TGNC populations should jointly focus on resilience and cultural sensitivity. This focus will connect patients with the resources that enable them to seek the health care they need.

Authors' Contributions

J.T.J. was responsible for analysis and interpretation of the data, design, drafting, critically revising the article, and final approval. N.J.C. was responsible for the conception, design, interpretation of data, and critically revising the article. R.D.A. was responsible for design, interpretation of data, and critically revising the article. R.C.K. assisted in drafting and critically revised the article. D.H. assisted in drafting and revised the article. All co-authors have reviewed and approved of the submitted article.

Disclaimer

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References

1. The Williams Institute. Adult LGBT population in the United States. 2020. Available at <https://williamsinstitute.law.ucla.edu/publications/adult-lgbt-pop-us/>. Accessed August 14, 2020.
2. Downing JM, Przedworski JM. Health of transgender adults in the US, 2014–2016. *Am J Prev Med*. 2018;55:336–344.
3. Edmiston EK, Donald CA, Sattler AR, et al. Opportunities and gaps in primary care preventative health services for transgender patients: a systematic review. *Transgend Health*. 2016;1:216–230.
4. Reisner S. Meeting the healthcare needs of transgender people [Webinar]. The National LGBT Education Center, a program of the Fenway Institute, Boston. 2012. Available at https://www.lgbtqihealtheducation.org/wp-content/uploads/Sari-slides_final1.pdf. Accessed August 14, 2020.
5. Harris RP, Wilt TJ, Qaseem A. A value framework for cancer screening: advice for high-value care from the American College of Physicians. *Ann Intern Med*. 2015;162:712–717.
6. Stone EG, Morton SC, Hulscher ME, et al. Interventions that increase use of adult immunization and cancer screening services: a meta-analysis. *Ann Intern Med*. 2002;136:641–651.
7. Institute of Medicine (US) Committee on Lesbian, Gay, Bisexual, and Transgender Health Issues and Research Gaps and Opportunities. *The Health of Lesbian, Gay, Bisexual, and Transgender People: Building a Foundation for Better Understanding*. Washington, DC: National Academies Press (US), 2011. Available at <https://www.ncbi.nlm.nih.gov/books/NBK64806/>. Accessed August 15, 2020.

8. Murad MH, Elamin MB, Garcia MZ, et al. Hormonal therapy and sex reassignment: a systematic review and meta-analysis of quality of life and psychosocial outcomes. *Clin Endocrinol (Oxf)*. 2010;72:214–231.
9. Sutcliffe PA, Dixon S, Akehurst RL, et al. Evaluation of surgical procedures for sex reassignment: a systematic review. *J Plast Reconstrct Aesthet Surg*. 2009;62:294–306.
10. Kiran T, Davie S, Singh D, et al. Cancer screening rates among transgender adults: cross-sectional analysis of primary care data. *Can Fam Physician*. 2019;65:e30–e37.
11. Operario D, Soma T, Underhill K. Sex work and HIV status among transgender women: systematic review and meta-analysis. *J Acquir Immune Defic Syndr*. 2008;48:97–103.
12. Scandurra C, Mezza F, Maldonato N, et al. Health of non-binary and genderqueer people: a systematic review. *Front Psychol*. 2019;10:1452.
13. Bednarczyk RA, Whitehead JL, Stephenson R. Moving beyond sex. Assessing the impact of gender identity on human papillomavirus vaccine recommendations and uptake among a national sample of rural-residing LGBT young adults. *Papillomavirus Res*. 2017;3:121–125.
14. Singh V, Gratzler B, Gorbach PM, et al. Transgender women have higher human papillomavirus prevalence than men who have sex with men—two US cities, 2012–2014. *Sex Transm Dis*. 2019;46:657–662.
15. Shover CL, DeVost MA, Beymer MR, et al. Using sexual orientation and gender identity to monitor disparities in HIV, sexually transmitted infections, and viral hepatitis. *Am J Public Health*. 2018;108:S277–S283.
16. Mangla N, Mamun R, Weisberg IS. Viral hepatitis screening in transgender patients undergoing gender identity hormonal therapy. *Eur J Gastroenterol Hepatol*. 2017;29:1215–1218.
17. Practice bulletin no. 168: cervical cancer screening and prevention. *Obstet Gynecol*. 2016;128:e111–e130.
18. Practice bulletin number 179: breast cancer risk assessment and screening in average-risk women. *Obstet Gynecol*. 2017;130:e1–e16.
19. Agency for Healthcare Research and Quality. 2018. National healthcare quality and disparities report. Available at <https://www.ahrq.gov/research/findings/nhqrdr/nhqrdr18/index.html> Accessed August 15, 2020.
20. Jorm LR, Shepherd LC, Rogers KD, Blyth FM. Smoking and use of primary care services: findings from a population-based cohort study linked with administrative claims data. *BMC Health Serv Res*. 2012;12:1–10.
21. Lau JS, Adams SH, Irwin Jr CE, Ozer EM. Receipt of preventive health services in young adults. *J Adolesc Health*. 2013;52:42–49.
22. DeVoe JE, Fryer GE, Phillips R, Green L. Receipt of preventive care among adults: insurance status and usual source of care. *Am J Public Health*. 2003;93:786–791.
23. Kushel MB, Vittinghoff E, Haas JS. Factors associated with the health care utilization of homeless persons. *JAMA*. 2001;285:200–206.
24. Thoemmes F, Mohan K. Graphical representation of missing data problems. *Struct Equations Model*. 2015;22:631–642.
25. Schwartz S, Gatto NM, Campbell UB. Extending the sufficient component cause model to describe the Stable Unit Treatment Value Assumption (SUTVA). *Epidemiol Perspect Innov*. 2012;9:3.
26. Safer JD, Coleman E, Feldman J, et al. Barriers to health care for transgender individuals. *Curr Opin Endocrinol Diabetes Obes*. 2016;23:168.
27. Seelman KL, Colón-Díaz MJ, LeCroix RH, et al. Transgender noninclusive healthcare and delaying care because of fear: connections to general health and mental health among transgender adults. *Transgend Health*. 2017;2:17–28.
28. Hugto JMW, Reisner SL, Pachankis JE. Transgender stigma and health: a critical review of stigma determinants, mechanisms, and interventions. *Soc Sci Med*. 2015;147:222–231.
29. Reisner SL, Bailey Z, Sevelius J. Racial/ethnic disparities in history of incarceration, experiences of victimization, and associated health indicators among transgender women in the US. *Women Health*. 2014;54:750–767.
30. Brown GR, Jones KT. Racial health disparities in a cohort of 5,135 transgender veterans. *J Racial Ethnic Health Disparities*. 2014;1:257–266.
31. Glick JL, Theall KP, Andrinopoulos KM, Kendall C. The role of discrimination in care postponement among trans-feminine individuals in the US national transgender discrimination survey. *LGBT Health*. 2018;5:171–179.
32. Colpitts E, Gahagan J. The utility of resilience as a conceptual framework for understanding and measuring LGBTQ health. *Int J Equity Health*. 2016;15:1–8.
33. Rowling J, Baldwin A, Schnarrs PW. Influences of health care access on resilience building among transgender and gender non-binary individuals. *Int J Transgend*. 2019;20:205–217.
34. Carpenter CS, Eppink ST, Gonzales G. Transgender status, gender identity, and socioeconomic outcomes in the United States. *Ind Labor Relat Rev*. 2020;73:573–599.
35. Rowe D, Ng YC, O’Keefe L, Crawford DJ. Providers’ attitudes and knowledge of lesbian, gay, bisexual, and transgender health. *Fed Pract*. 2017;34:28.
36. Nowaskie DZ, Sowinski JS. Primary care providers’ attitudes, practices, and knowledge in treating LGBTQ communities. *J Homosex*. 2018;66:1–21.
37. Rowan SP, Lilly CL, Shapiro RE, et al. Knowledge and attitudes of health care providers toward transgender patients within a rural tertiary care center. *Transgend Health*. 2019;4:24–34.
38. Utamsingh PD, Kenya S, Lebron CN, Carrasquillo O. Beyond sensitivity. LGBT healthcare training in US medical schools: a review of the literature. *Am J Sexuality Educ*. 2017;12:148–169.
39. Lindsay S, Rezai M, Kolne K, Osten V. Outcomes of gender-sensitivity educational interventions for healthcare providers: a systematic review. *Health Educ J*. 2019;78:958–976.

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Abbreviations Used

aOR = adjusted odds ratio
 CI = confidence interval
 cOR = crude odds ratio
 HIV = human immunodeficiency virus
 HPV = human papillomavirus
 PCP = primary care provider
 TGNC = transgender and gender-nonconforming