Opioid Use Disorder Treatment in Sexually and Gender Diverse Patients:

A Retrospective Cohort Study

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Abstract

Objective: This study assesses differences in opioid use disorder (OUD) treatment among sexually and gender diverse (SGD) vs non-SGD people.

Methods: Using electronic health record data from a federally qualified health center, this retrospective cohort study explores OUD treatment for adults with an OUD diagnosis, as well as any clinic visit from January 2013 until June 2021 (N = 1,133), through review of medication prescriptions for OUD and OUD-related visits.

Results: Patients identifying as lesbian/gay had the lowest prevalence of OUD, with 1% (n = 231) of lesbian/gay patients having an OUD diagnosis, as compared to 1.5% (n = 560) of straight/heterosexual patients, 1.7% (n = 108) of bisexual patients, 1.4% (n = 44) of patients who identified as "something else," 1.6% (n = 26) of patients who "don't know" their sexual orientation, and 1.6% (n = 164) of patients who did not report their sexual orientation ($P < .0001$). There was not a statistically significant difference ($P = .49$) between OUD diagnosis in the transgender and gender diverse (TGD) cohort (1.5%, n = 117) and the cisgender cohort (1.4%, n = 1016). Straight/heterosexual patients were more likely than sexually diverse patients to be prescribed buprenorphine (44.3%, n = 248 vs 34.7%, n = 133, $P = .003$), methadone (13.8%, n = 77 vs 9.4%, n = 36, $P = .04$), and naloxone (47.0%, n = 263 vs 38.9%, n = 149, $P = .01$). Cisgender patients were more likely to be prescribed buprenorphine than TGD patients (40.9%, n = 416 vs 31.6%, n = 37, $P = .05$). TGD patients were more likely to be prescribed oral naltrexone than cisgender patients (19.7%, n = 23 vs 7.0%, n = 71, $P < .001$). The straight/heterosexual cohort had the lowest proportion of pharmacotherapy (19.3%, n = 108), individual psychotherapy (35.9%, n = 201), addiction and group therapy (12.9%, n = 72), case management (8.4%, n = 47), and complementary care visits (3.9%, n = 22). Straight/heterosexual patients had the highest proportion of outpatient medical visits (68.4%, n = 383). Transgender men had the highest proportion of individual therapy visits (80.8%, n = 21), compared to 53.7% (n = 29) of genderqueer/nonbinary patients, 51.4% (n = 19) of transgender women, 40.7% (n = 300) of cisgender men, and 40.6% (n = 113) of cisgender women ($P < .001$).

Conclusion: The disparities in buprenorphine prescriptions and in outpatient medical visit access between the SGD and non-SGD cohorts highlight important priorities for culturally responsive interventions at clinical, organizational, and systems levels.

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Within the past 20 years, opioid use disorder (OUD) has become a public health epidemic,[1] with both prevalence and morbidity rising.[2] Higher rates of OUD have been reported within sexually and gender diverse (SGD) populations.[3] Systemic, social, and personal factors are linked with this disparity among SGD people, including higher rates of depression,[4] suicidal ideation,[5] discrimination,[6] stigma,[4,6] and lack of social support, particularly in adolescence and young adulthood.[7] These factors, particularly co-occurring mental illness, stigma, and young age, can also impede OUD treatment.[8,9]

Evidence-based medication and behavioral treatments exist for OUD; their appropriate selection depends on a patient's current opioid use and stage of recovery. Pharmacotherapies, considered first-line treatment for OUD, include 3 Food and Drug Administration–approved medications: methadone, buprenorphine, and oral or injectable naltrexone.[10,11] Additionally, naloxone, a rescue medication for opioid overdose, is available as a resource for patients and families and is available in some states without a prescription. Psychosocial interventions are also effective

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Clinical Points

- Little is known about opioid use disorder (OUD) treatment access and disparities among sexually and gender diverse (SGD) people compared to straight/heterosexual and cisgender people.
- SGD patients have lower prescription receipt rates for several medications for OUD, and higher rates of clinic visits, than non-SGD patients. There is also significant variation across SGD categories.
- OUD treatment access and engagement are critical for addressing OUD-related disparities among SGD people.

treatments for OUD, including individual and group psychotherapy, motivational interviewing, and contingency management.[12,13]

Within the United States, approximately 2.2 million people have past or current OUD, with approximately 1 in 4 receiving medication for OUD (MOUD).[14] Psychosocial interventions are also not sufficiently utilized: almost 47% of patients with both OUD and comorbid mental illness do not receive such therapies.[15] Many patient-, provider- and systems-level barriers inhibit provision and uptake of OUD treatment, including health care stigma against people with OUD, governmental regulations, high cost, low availability, and too few clinicians who treat OUD.[16,17] These barriers are exacerbated for SGD patients, who experience higher rates of health care stigma and discrimination, as well as socioeconomic disparities.[16–19]

This study examines differences in receipt of MOUD prescriptions and psychosocial OUD interventions within an SGD patient cohort, as well as between SGD and heterosexual, cisgender patients, using data from a federally qualified health center (FQHC) electronic health record (EHR). FQHCs are US-based health care delivery systems that serve all patients, regardless of ability to pay. This study utilized EHR data from an FQHC that delivers primary medical and behavioral health care for SGD populations as its central organizational mission. More than half of the FQHC's patients are SGD, and all staff undergo training to offer culturally responsive services for SGD patients within an inclusive and affirming care environment that features culturally tailored policies, procedures, forms, and EHR functionalities. We therefore hypothesized that receipt of MOUD prescriptions and psychosocial OUD interventions by SGD patients would be comparable to receipt of these care services by heterosexual, cisgender patients.[19]

METHODS

Design

The study period was January 14, 2013, through June 30, 2021. The start date reflected the beginning of routine patient sexual orientation and gender identity data collection in the FQHC's EHR. The inclusion criteria were being over 18 years of age with *International Classification of Diseases, Ninth Revision (ICD-9),* codes, *ICD-10* codes, and/or problem descriptions of OUD diagnoses on the patient's problem list, as well as any clinic visit during the study period. The FQHC's Institutional Review Board approved all study procedures and granted a waiver of informed consent.

Measures

Outcomes. OUD visit utilization was measured by identifying all behavioral health visits (individual pharmacotherapy, individual psychotherapy, addiction group therapy, and other group therapy) and case management visits for patients with an OUD diagnosis. OUD visit utilization for primary care and complementary care (acupuncture and osteopathic manipulation treatment) was determined based on patients having an OUD diagnosis linked to the visit. Determination of behavioral health visit utilization for patients with OUD did not require their OUD diagnosis to be linked to behavioral health visits, because patients with OUD and comorbid mental illness may seek treatment for OUD in conjunction with a range of behavioral health interventions for their co-occurring psychiatric disorders.[20] Case management visits did not have linked diagnoses.

Individual pharmacotherapy visits included MOUD-specific visits, general psychiatry intakes, and general psychiatry follow-up visits. In addition to addiction group therapy, other group therapies offered at the FQHC had the following overarching themes: anxiety, depression, chronic pain, eating disorders, intimate partner violence, trauma, sex, older adults and aging, gender, wellness, skills building, and couples work, as well as cognitive behavioral therapy and dialectical behavior therapy groups. The FQHC had a dedicated addiction program that offered substance use disorder–specific group therapy separately from other group therapies. Given the high frequency with which patients' OUDs are discussed clinically across all of the FQHC's group therapies, including those not designed specifically to treat OUDs, all group therapies were therefore combined for analyses. Case management consisted of an integrated team across primary and behavioral health care at the FQHC and was accessed if a need emerged during any visit type.

Visit measures were structured as binary outcomes, with patients grouped based on having zero vs 1 or more visits, with the exception of individual pharmacotherapy and psychotherapy visits, which were given a cutoff of 2 or more visits vs 1 or no visits. This two-visit threshold was selected because transgender and gender diverse (TGD) patients could access a single behavioral health visit specifically seeking a letter of support for gender-

affirming surgery, which would otherwise erroneously inflate individual pharmacotherapy and psychotherapy utilization rates for this population. During the study period, an FQHC policy allowed people living with human immunodeficiency virus (HIV) and TGD people who do not have their primary care based at the FQHC to still access behavioral health services there, with all other patients required to have primary care based at the FQHC to be eligible for behavioral health services. Shorter wait times were facilitated for patients to access gender-affirming surgery assessment appointments within psychiatry, though not for other types of mental health care.

MOUD prescription receipt was determined based on the presence of a MOUD prescription order, including buprenorphine, buprenorphine/naloxone, naltrexone (injectable or oral), or methadone on the medication list as a dichotomous outcome variable. Methadone was included only if prescribed by an outside provider. Due to regulations that restrict prescribing of methadone for OUD treatment to only federally licensed OUD treatment programs, any methadone prescriptions from the FQHC were for chronic pain rather than OUD treatment. Naloxone prescriptions were modeled separately from the other medications to differentiate this overdose-rescue medication.[21] These measures do not indicate that the patient filled the prescription or took the medication, but rather that the patient and clinician had established an OUD treatment plan insofar as the clinician had prescribed the medication.

Covariates. Demographic measures included gender modality,[22] gender identity, sexual orientation, age, race, ethnicity, relationship status, and insurance type, which were collected with patients at FQHC registration. Gender modality refers to whether one's gender identity corresponds to societal expectations based on the sex assigned at birth (TGD/cisgender). Gender modality and identity were extracted by a structured query language (SQL) function. Gender identity was determined by each patient's response to the question "What is your gender?" (female/male/genderqueer or not exclusively male or female). When this response matched the response to "What was your sex assigned at birth?" (female/male), the patient's gender modality was categorized as cisgender; when these responses differed, the patient's gender modality was categorized as transgender or gender diverse. When registration data were missing, the SQL function for gender identity and modality included values for one or the other that were reported to providers and located in discrete fields in patients' charts.

The sexual orientation measure included patients' answers to 1 question: "What is your sexual orientation?" (lesbian, gay or homosexual/straight, or heterosexual/bisexual/something else/don't know). For relationship status, patients were categorized as "partnered" if they selected "married" or "partnered" and "unpartnered" if they responded "single, separated, divorced, or widowed." Housing status was aggregated from both patient reports and provider EHR documentation. The housing variable indicated whether a patient had experienced houselessness during their FQHC care and did not necessarily indicate present status. Covariates also included Patient Health Questionnaire 9-item (PHQ-9) instrument severity scores to assess comorbid depression as it may relate to OUD treatment access[23,24] and prescription orders for other psychiatric medications. PHQ-9 surveys were completed by patients at clinic visits. PHQ-9 total scores were grouped into severity categories: none (1–4), mild (5–9), moderate (10–14), moderately severe (15–19), and severe (20–27).[23] The presence of one or more prescription orders for any psychiatric medications not directly related to OUD treatment, as collated from a list compiled by the National Alliance on Mental Illness, was combined into a binary measure.[25] This list of medications was reviewed by the first and senior authors, who are both practicing clinical psychiatrists. All patient data were extracted from the EHR via SQL.

Statistical Analysis

We conducted descriptive statistics and presented frequencies with corresponding percentages or medians with interquartile ranges. Demographic differences by gender identity and sexual orientation were tested with χ^2 for categorical variables. Non-normal distributions for age were compared with Wilcoxon rank-sum tests. OUD diagnosis prevalence was calculated based on the proportions of patients with an OUD diagnosis via SQL query from all patients in the EHR. For these data, χ^2 tests were calculated using an online calculator at https://www.medcalc.org/calc/chisquared-2way.php. In preliminary univariate logistic regression tests, covariates associated with outcomes at the $P > .20$ level were included in subsequent multivariable models,[26] in order to avoid excluding potentially important covariates from these models. Data analyses were based on missing at random assumptions, and listwise deletion was used in logistic regression models. Separate multivariable binary logistic regression models exploring associations between gender identity, sexual orientation, and MOUD prescription receipt (buprenorphine, buprenorphine/naloxone, methadone, oral naltrexone, injectable naltrexone, and naloxone) or visits for OUD (behavioral health for MOUD prescriptions; individual psychotherapy; addiction and other group psychotherapy; outpatient medical care; case management; complementary care) were run while adjusting for demographic variables, insurance type, and PHQ-9 severity. Models that tested associations with prescriptions for an MOUD were also adjusted for other psychiatric medication prescription orders.

Table 1.
Patient Demographics by Sexual Orientation (N = 943)[a and b]

	Sexually diverse[c] (N = 1991) Median (IQR)	Straight/heterosexual (N = 975) Median (IQR)	*P*
Age, median (IQR)	38.0 (32.0–52.0)	40.0 (34.0–50.8)	.30
	n (%)	n (%)	
Gender identity			**<.001**
Genderqueer/nonbinary	47 (12.3)	3 (0.5)	
Transgender woman	23 (6.0)	7 (1.3)	
Transgender man	11 (2.9)	8 (1.4)	
Cisgender woman	76 (19.8)	148 (26.4)	
Cisgender man	226 (59.0)	394 (70.4)	
Sex assigned at birth			.95
Female	105 (28.1)	154 (27.9)	
Male	269 (71.9)	398 (72.1)	
Race			.10
Black or African American	17 (4.7)	43 (8.4)	
Multiracial	19 (5.3)	17 (3.3)	
Other	13 (3.6)	16 (3.1)	
White	310 (86.4)	434 (85.1)	
Ethnicity			.79
Hispanic	41 (12.3)	53 (11.6)	
Not Hispanic	293 (87.7)	402 (88.4)	
Relationship status			**.001**
Partnered	80 (22.5)	74 (14.2)	
Not partnered	275 (77.5)	447 (85.8)	
Insurance type			**.03**
Uninsured	28 (7.8)	35 (6.6)	
Public (Medicare/Medicaid/other)	205 (57.4)	353 (66.2)	
Private	124 (34.7)	145 (27.2)	
Housing			.25
Houseless	46 (12.0)	54 (9.6)	
Not houseless	337 (88.0)	506 (90.4)	

[a]Group differences were tested with χ^2, except age was tested with the Kruskal-Wallis H test. Values are expressed as n (%) unless otherwise noted; percentages calculated from nonmissing values.
[b]26 (2.3%) of patients reported that they do not know their sexual orientation, and 164 (14.5%) of patients declined to answer.
[c]Lesbian, gay or homosexual, bisexual, and something else.

$P < .05$ defined statistical significance. All analyses were conducted in SPSS version 25 or 29.

RESULTS

Patient Demographics

There were 1,133 unique patients with an OUD diagnosis out of 80,576 total patients at the FQHC (1.4%). Among patients with OUD, 943 patients reported their sexual orientation (83.2%) (Table 1). There were 383 patients who reported a sexual orientation other than straight/heterosexual (40.6%), of whom 231 identified as lesbian or gay, 108 as bisexual, and 44 as "something else." Of the 1,113 patients with OUD, all patients reported their gender modality and identity: there were 117 patients with a TGD modality (10.3%) (Table 2), including 54 patients who identified as genderqueer/nonbinary, 37 as transgender women, and 26 as transgender men. In addition, 738 patients with OUD identified as cisgender men and 278 as cisgender women.

OUD Diagnosis

Patients identifying as lesbian/gay had the lowest prevalence of OUD, with 1% (n = 231) of lesbian/gay patients having an OUD diagnosis, as compared to 1.5% (n = 560) of straight/heterosexual patients, 1.7% (n = 108) of bisexual patients, 1.4% (n = 44) of patients who identified as "something else," 1.6% (n = 26) of patients who "don't know" their sexual orientation, and 1.6% (n = 164) of patients who did not report their sexual orientation ($P < .0001$). When bisexual patients were stratified by gender identity, 1.7% (n = 52) of bisexual transgender and cisgender women, 2.1% (n = 46) of bisexual transgender and cisgender men, and 1.3% (n = 781) of bisexual genderqueer/nonbinary patients had OUD diagnoses.

Based on gender identities, cisgender men had the highest OUD prevalence (1.8%, n = 738), followed by transgender women (1.7%, n = 37) and genderqueer/nonbinary patients (1.6%, n = 54) ($P < .0001$). Cisgender women had the lowest proportion of identified OUD (0.9%, n = 278). When simplified into a binary

Table 2.
Patient Demographics by Gender Modality (N = 1133)[a]

	Transgender and gender diverse[b] (N = 117)	Cisgender (N = 3177)	*P*
Age, median (IQR)	34.0 (28.5–43.0)	40.5 (34.0–52.0)	**<.001**
	n (%)	n (%)	
Sexual orientation			**<.001**
Lesbian/gay	31 (31.3)	200 (23.7)	
Bisexual	27 (27.3)	81 (9.6)	
Something else	23 (23.3)	21 (2.5)	
Straight/heterosexual	18 (18.2)	542 (64.2)	
Sex assigned at birth			**<.001**
Female	51 (43.6)	267 (27.2)	
Male	66 (56.4)	716 (72.8)	
Race			.16
Black or African American	6 (5.7)	67 (7.4)	
Multiracial	5 (4.8)	36 (4.0)	
Other	7 (6.7)	25 (2.8)	
White	87 (82.9)	777 (85.9)	
Ethnicity			**.03**
Hispanic	19 (18.6)	91 (11.2)	
Not Hispanic	83 (81.4)	718 (88.8)	
Relationship status			**.005**
Partnered	29 (27.1)	144 (16.2)	
Not partnered	78 (72.9)	744 (83.8)	
Insurance type			**.04**
Uninsured	6 (5.5)	73 (7.6)	
Public (Medicare/Medicaid/other)	59 (54.1)	613 (63.8)	
Private	44 (40.4)	275 (28.6)	
Housing			**.06**
Houseless	19 (16.2)	106 (10.4)	
Not houseless	98 (83.8)	910 (89.6)	

[a]Group differences were tested with χ^2 tested with Wilcoxon rank sum. Values are expressed as n (%) unless otherwise noted.
[b]Transgender and genderqueer or not exclusively male or female groups.

comparison of cisgender vs TGD gender modalities, there was not a statistically significant difference between OUD diagnosis in the TGD cohort (1.5%, n = 117) and the cisgender cohort (1.4%, n = 1,016).

MOUD Prescriptions

Fifty-four percent (n = 607) of all patients with OUD were prescribed MOUD, with buprenorphine the most frequently prescribed MOUD (n = 453). In addition, 47% (n = 494) were prescribed naloxone, the rescue medication for opioid overdose.

Across all sexual orientation categories, which were combined because the sample size for each MOUD prescription was insufficient to perform valid χ^2 tests for every sexual orientation category, straight/heterosexual patients were more likely than sexually diverse patients to be prescribed any MOUD prescription (not including naloxone) (57.9% vs 48.3%, $P = .004$), buprenorphine (44.3% vs 34.7%, $P = .003$), and methadone (13.8% vs 9.4%, $P = .04$). In contrast, sexually diverse patients were more likely to be prescribed oral naltrexone than straight/heterosexual patients (11.2% vs 5.7%, $P = .01$). Straight/heterosexual patients were more like to be prescribed naloxone (Table 4) (47.0% vs 38.9%, $P = .01$).

For gender modality groups and MOUD prescriptions, there was no significant difference in the likelihood of being prescribed any MOUD between cisgender and TGD patients. Cisgender patients were more likely to receive buprenorphine prescriptions than TGD patients (40.9% vs 31.6%, $P = .05$) (Table 3). No statistically significant associations were found between gender modality and prescriptions for methadone or injectable naltrexone, or for naloxone.

TGD patients were more likely to be prescribed oral naltrexone than cisgender patients (19.7% vs 7.0%, $P < .001$). No statistically significant associations were found between gender modality and prescriptions for methadone or injectable naltrexone. There was also no statistically significant association between gender modality and prescriptions for naloxone (Table 4).

We conducted a post hoc logistic regression model to test whether alcohol use disorder comorbidity explained the higher likelihood of sexually diverse and TGD patients receiving oral naltrexone prescriptions. After adjusting for alcohol use disorder, we found that sexually

Table 3.

Prescriptions of Medication for Opioid Use Disorder by Sexual Orientation and Gender Modality[a]

	Buprenorphine or buprenorphine/naloxone n = 453		Methadone (prescriptions external to study's site) n = 131		Oral naltrexone n = 94		Injectable naltrexone n = 68		Any MOUD n = 607	
	n (%)	*P*	n (%)	*P*	n (%)	*P*	n (%)	*P*	n (%)	*P*
Sexual orientation		**.003**		**.04**		**.01**		0.5		**.004**
Sexually diverse N = 383	133 (34.7)		36 (9.4)		43 (11.2)		26 (6.8)		185 (48.3)	
Straight/heterosexual N = 560	248 (44.3)		77 (13.8)		37 (6.6)		32 (5.7)		324 (57.9)	
Gender modality		**.05**		0.17		**<.001**		0.41		.47
Transgender and gender diverse N = 117	37 (31.6)		9 (7.7)		23 (19.7)		9 (7.7)		59 (50.4)	
Cisgender N = 1016	416 (40.9)		122 (12.0)		71 (7.0)		59 (5.8)		548 (53.9)	

[a]Percentages calculated from nonmissing values.
Abbreviation: MOUD = medication for opioid use disorder.

diverse patients did not have significantly elevated odds compared to straight/heterosexual patients (odds ratio [OR] = 1.3, 95% CI, 0.8–2.2, *P* = .30), whereas TGD patients still had significantly elevated odds of naltrexone prescription receipt compared to cisgender patients (OR = 2.1, 95% CI, 1.1–4.0, *P* = .02).

In multivariable regression analysis, adjusted for gender identity, ethnicity, age, insurance type, housing status, PHQ-9 severity, and other psychiatric medications, lesbian/gay patients had half the odds of receiving any MOUD prescription (*P* = .001, ref = straight/heterosexual) and bisexual patients had 0.6 times the odds (*P* = .04, ref = straight/heterosexual). Having Medicare or Medicaid insurance (ref = private insurance), being unhoused, and having prescriptions for other psychiatric medications were positively associated with receipt of any MOUD prescription. There were no statistically significant associations by gender identity.

In a second multivariable regression analysis focused on only naloxone prescriptions and adjusted for gender identity, ethnicity, race, age, insurance type, housing status, PHQ-9 severity, and other psychiatric medications, bisexual patients had half the odds of naloxone prescription receipt (*P* = .02, ref = straight/heterosexual). Having Medicare or Medicaid insurance (ref = private insurance), being unhoused, and having prescriptions for other psychiatric medications were also positively associated with naloxone prescription receipt.

Table 4.

Prescriptions of Naloxone by Sexual Orientation and Gender Modality[a]

	Naloxone N = 494	
	n (%)	*P*
Sexual orientation		**.01**
Sexually diverse N = 383	149 (38.9)	
Straight/heterosexual N = 560	263 (47.0)	
Gender modality		.43
Transgender and gender diverse N = 117	47 (40.2)	
Cisgender N = 1016	447 (44.0)	

[a]Percentages calculated from nonmissing values.

Clinic Visits for OUD

Among all patients with OUD, 73.4% (n = 832) had an OUD visit (Table 5). Across sexual orientation cohorts, the straight/heterosexual group had the lowest proportion of patients with visits for pharmacotherapy (19.3%, n = 108, *P* < .001), individual psychotherapy (35.9%, n = 201, *P* < .001), addiction and other group therapy (12.9%, n = 72, *P* < .001), case management (8.4%, n = 47, *P* = .001), and complementary care (3.9%, n = 22, *P* = .01). Straight/heterosexual patients had the highest proportion of outpatient medical visits (68.4%, n = 383 patients, *P* = .004). Across gender identity cohorts, transgender men had the highest proportion of patients with individual therapy visits (80.8%, n = 2, *P* < .001), compared to 53.7% of genderqueer/nonbinary patients (n = 29), 51.4% of transgender women (n = 19), 40.7% of cisgender men (n = 300), and 40.6% of cisgender women (n = 113).

In multivariable regression analyses adjusted for gender identity, race, insurance type, housing status, PHQ-9 severity, and other psychiatric medications, variables associated with higher odds of any behavioral health visit attendance among patients with OUD included lesbian/gay sexual orientations (adjusted odds ratio [aOR] = 2.1, 95% CI, 1.4–3.1, *P* < .001, ref = straight/heterosexual), bisexual sexual orientations (aOR = 2.0, 95% CI, 1.1–3.4, *P* = .02), and "don't know" sexual orientations (aOR = 3.3, 95% CI, 1.2–9.4, *P* = .03). Patients with Medicaid insurance (aOR = 1.6, 95% CI, 1.1–2.4, *P* = .03, ref = private insurance) or higher PHQ-9 depression severity scores (severe: aOR = 9.5, 95% CI, 5.0–17.7, *P* < .001; moderately severe: aOR = 7.3, 95% CI, 3.9–13.6, *P* < .001; moderate: aOR = 5.6, 95% CI,

Table 5.
Visits for Opioid Use Disorder by Sexual Orientation and Gender Identity[a]

	Behavioral health visits						Outpatient medical care and other visits					
	Pharmacotherapy (including MOUD)		Individual psychotherapy ≤1/≥2		Addiction and other group psychotherapy		Outpatient medical care		Case management		Complementary care (acupuncture)	
	n (%)	*P*	n (%)	*P*	n (%)	*P*	n (%)	*P*	n (%)	*P*	n (%)	*P*
Sexual orientation		**<.001**		**<.001**		**<.001**		**.004**		**.001**		**.01**
Lesbian/gay N = 231	77 (33.3)		126 (54.5)		58 (25.1)		126 (54.5)		35 (15.2)		21 (9.1)	
Bisexual N = 108	32 (29.6)		63 (58.3)		24 (22.2)		63 (58.3)		23 (21.3)		7 (6.5)	
Something else N = 44	18 (40.9)		24 (54.5)		8 (18.2)		30 (68.2)		7 (15.9)		3 (6.8)	
Don't know N = 26	10 (38.5)		14 (53.8)		13 (50.0)		17 (65.4)		2 (7.7)		4 (15.4)	
Straight/heterosexual N = 560	108 (19.3)		201 (35.9)		72 (12.9)		383 (68.4)		47 (8.4)		22 (3.9)	
Gender identity		.59		**<.001**		.14		.08		.17		.82
Genderqueer/nonbinary N = 54	17 (31.5)		29 (53.7)		8 (14.8)		29 (53.7)		7 (13.0)		5 (9.3)	
Transgender woman N = 37	10 (27.0)		19 (51.4)		12 (32.4)		19 (51.4)		7 (18.9)		2 (5.4)	
Transgender man N = 26	8 (30.8)		21 (80.8)		4 (15.4)		14 (53.8)		4 (15.4)		2 (7.7)	
Cisgender woman N = 278	69 (24.8)		113 (40.6)		44 (15.8)		166 (59.7)		22 (7.9)		19 (6.8)	
Cisgender man N = 738	171 (23.2)		300 (40.7)		142 (19.2)		484 (65.6)		90 (12.2)		42 (5.7)	

[a]Percentages calculated from nonmissing values.
Abbreviation: MOUD = medication for opioid use disorder.

3.0–10.4, $P < .001$; mild: aOR = 2.7, 95% CI, 1.4–5.1, $P = .002$) also had higher odds of any behavioral health visit attendance. Cisgender women had significantly lower odds of any group therapy visit (aOR = 0.6, 95% CI, 0.3–0.99, $P = .05$, ref = cisgender men) while adjusting for sexual orientation, race, insurance type, housing status, and PHQ-9 severity. Lesbian/gay patients had higher odds of attending any group therapy (aOR = 2.0, 95% CI, 1.3–3.2, $P = .004$) while adjusting for gender identity, race, insurance type, housing status, and PHQ-9 severity, and higher odds of pharmacotherapy visits (aOR = 1.9, 95% CI, 1.2–3.0, $P = .004$) while adjusting for gender identity, ethnicity, age, insurance type, and PHQ-9 severity.

Patients who reported their sexual orientation as "don't know" had more than 6 times the odds of attending group therapy than straight/heterosexual patients (aOR = 6.3, 95% CI, 2.5–16.3, $P < .001$) and increased odds of pharmacotherapy visits (aOR = 1.9, 95% CI, 1.2–3.0, $P = .04$). Higher odds of individual therapy visits were also seen among transgender men (aOR = 3.4, 95% CI, 1.1–11.2, $P = .04$), lesbian/gay (aOR = 1.9, 95% CI, 1.3–2.8, $P = .001$), and bisexual people (aOR = 2.1, 95% CI, 1.2–3.5, $P = .008$), while adjusting for insurance type, housing status, and PHQ-9 severity.

Compared to straight/heterosexual patients, lesbian/gay patients had lower odds of medical outpatient visits (aOR = 0.6, 95% CI, 0.4–0.9, $P = .009$), adjusted for gender identity, race, age, insurance type, relationship status, housing status, and PHQ-9 severity. Compared to straight/heterosexual patients, lesbian/gay patients also had over twice the odds (aOR = 2.1, 95% CI, 1.1–4.1, $P = .03$) of a case management visit, while bisexual patients had over 3 times the odds (aOR = 3.4, 95% CI, 1.5–7.9, $P = .004$) adjusted for gender identity, race, ethnicity, age, insurance type, housing status, and PHQ-9 severity. Compared to cisgender men, cisgender women had lower odds of a case management visit (aOR = 0.3, 95% CI, 0.1–0.7, $P = .005$), adjusted for sexual orientation, race, ethnicity, age, insurance type, housing status, and PHQ-9 severity. Patients who had Medicaid insurance had nearly 3 times the odds (aOR = 2.9, 95% CI, 1.3–6.6, $P = .01$, ref = private insurance) and patients who were unhoused had over 3 times the odds (aOR 3.5, 95% CI, 1.7–7.0, $P < .001$) of a case management visit. Complementary care visits were associated with lesbian/gay identities (aOR = 2.6, 95% CI, 1.2–5.8, $P = .02$) adjusted for gender identity, race, insurance type, relationship status, and PHQ-9 severity.

Overall, 86.1% of patients (n = 976) had either MOUD prescriptions or clinic visits for OUD, and 43.3% (n = 491) had both. While the cohorts differed in type of MOUD or visit offered, no statistically significant differences by gender identity or sexual orientation were observed in receipt of any or both MOUD and clinic visits for OUD.

DISCUSSION

This study found that bisexual patients had the highest prevalence of OUD (1.7%), followed by straight/heterosexual patients (1.5%) and lesbian/gay patients (1%). Although the finding regarding bisexual populations being at increased risk for OUD is consistent with previously documented findings,[27–30] the finding that straight/heterosexual patients had higher prevalence of OUD compared to lesbian/gay patients is surprising and not consistent with other studies.[28,29,31] In parallel, the TGD cohort had statistically similar prevalence of OUD (1.5%) compared to the cisgender cohort (1.4%): this is largely consistent with the literature that the prevalence of OUD in TGD communities is comparable to the general population.[32–34]

Additionally, this study found that straight/heterosexual patients were more likely than sexually diverse patients to be prescribed buprenorphine, methadone, and naloxone and that cisgender patients were more likely to be prescribed buprenorphine than TGD patients. This finding among TGD patients may be related to prevailing beliefs regarding differences among OUD medications in their potential risks of drug-drug interactions with gender-affirming hormones.[35] Specifically, opioid agonists used in OUD treatment have known interactions with certain antiretroviral HIV medications and with hormone-modulating medications, such as spironolactone.[36,37] Moreover, no corrections were made for OUD disease severity, potentially explaining the discrepancies in buprenorphine prescriptions if the straight/heterosexual and cisgender cohorts had more severe illness. Another possibility is that the SGD cohort has experienced historical bias and harassment in health care settings, leading to stress coping responses such as failure to engage in treatment,[35,38] even at this culturally responsive FQHC. Regardless of the reason, the lower likelihood of buprenorphine prescription receipt by SGD patients compared with both straight/heterosexual and cisgender patients suggests a disparity in access to this gold-standard MOUD, which may be further exacerbated in health systems not dedicated to serving SGD communities.

Oral naltrexone prescription receipt was more likely for both sexually diverse and TGD patients than for straight/heterosexual and cisgender patients, respectively; however, a post hoc logistic regression model showed that this relationship was no longer statistically significant for sexually diverse patients after adjusting for alcohol use disorder comorbidity, for which oral naltrexone is also a treatment.[39] The higher likelihood of oral naltrexone receipt for TGD patients than for cisgender patients at the FQHC even after adjusting for alcohol use disorder comorbidity warrants future investigation.

Multivariate analyses showed that, compared to straight/heterosexual patients, bisexual patients had approximately half the odds of being prescribed MOUD treatment and half the odds of naloxone prescription, despite this study and prior research finding elevated prevalence of opioid misuse specifically in bisexual populations,[40] possibly due to minority stress and nonacceptance by both heterosexual and gay/lesbian communities.[3,41,42]

Across sexual orientation cohorts, straight/heterosexual patients had the lowest proportion of behavioral health, case management, and complementary care visits; however, they had the highest proportion of outpatient medical visits related to their OUD care. One potential explanation for this finding is that straight/heterosexual patients at the FQHC may feel more comfortable receiving OUD treatment through outpatient medical visits than through behavioral health visits. Sexually diverse patients conversely may preferentially access OUD care through behavioral health, which may focus more extensively on addressing sexually diverse patients' psychosocial needs at this FQHC. Differences in utilization of various clinic visit types based on gender identity were not significant, with the exception of individual therapy, which had higher relative utilization by TGD patients, perhaps in the context of pervasive societal gender minority stressors.[35]

Further investigation of differential OUD care access in medical vs behavioral health settings by various SGD populations is warranted.

LIMITATIONS

The retrospective, cross-sectional design precluded causal inferences. Most patients were white and received health care at a well-resourced FQHC with a history of serving SGD people in Boston, Massachusetts. The demographic differences between cohorts are specific to this FQHC's patient population that was already established at a primary health care system, limiting generalizability to people receiving care elsewhere or disconnected from primary care altogether. This study was also limited by reliance on an EHR for data collection: OUD visits, behavioral health care visits, and MOUD prescriptions at other health care organizations may not have been recorded in the EHR. Certain variables, such as housing status, sex assigned at birth, and gender identity, relied on additional provider documentation to supplement these data for patients with missing information.

Our results for medication prescription receipt and visit attendance are binary (received a prescription or did not; attended 1–2 visits, depending on visit type, or did not). Using the presence or absence of prescription receipt and visit attendance as proxies for quality may have limitations, insofar as these measures do not reflect all aspects of the quality of care delivered. Additionally, methadone prescriptions from within the FQHC were discounted as these may reflect the management of pain

only; this approach may result in an underestimate of methadone prescriptions received by patients who have both chronic pain and OUD.

Case management and behavioral health visits were counted regardless of an OUD diagnosis being linked to the visit because patients with OUD and comorbid mental illness typically seek treatment for OUD through a range of behavioral health interventions focused on their other co-occurring disorders.[43–45] This may have resulted in the inclusion of visits unrelated to a patient's OUD and thus an artificial elevation of the behavioral health visit count in care utilization analyses. These visits were included in analyses because despite not being coded as related to OUD, OUD impacts other psychiatric conditions and therefore would likely be discussed in a behavioral health visit, even if not coded as such. Moreover, prior research has shown that clinicians document substance use disorder diagnoses in the EHR at rates significantly lower than their true occurrence in the general population, perhaps due to fear of further stigmatizing patients.[46] The FQHC's policy that allowed 2 subgroups of patients (people living with HIV, including a large proportion of sexually diverse cisgender men; TGD people) to access behavioral health services at the FQHC regardless of their primary care affiliation may partially explain variations in behavioral health care visits based on sexual orientation and gender identity. Additionally, naltrexone prescriptions were treated as part of the OUD treatment regimen in this study: co-occurring alcohol use disorders, and thus, potential targets for this prescription, were not queried.

Conclusion

In summary, this study presents novel findings on OUD diagnosis and treatment in a care-seeking population of SGD and non-SGD patients. These results offer new perspectives on access to and utilization of OUD treatment in SGD communities. Our findings regarding disparities in access to MOUD prescriptions and outpatient medical visits for the SGD cohort highlight the need for increased access to culturally responsive OUD treatment and services for SGD communities. Interventions such as sexual orientation and gender identity nondiscrimination policies, provision of SGD-tailored programming and treatment, hiring of SGD-affirming clinic staff, adoption of inclusive language on intake forms, provision of SGD sensitivity training for staff, inclusion of SGD-welcoming visual signage and symbols in clinical settings, availability of all-gender restrooms, and linkage to community-based SGD social services are potential practice-level interventions.

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