ORIGINAL RESEARCH

Comparison of Medical Diagnoses among Same-Sex and Opposite-Sex-Partnered Patients

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Background: **Health disparities for gay and lesbian individuals are well documented in survey research. However, a limitation throughout the existing literature is the reliance on self-reported health conditions. This study used medical record diagnoses for gay and lesbian patients seen in primary care clinics.**

Methods: **This study used medical records of primary care patients (n = 31,569) seen at Midwestern, university-affiliated primary care clinics. First, all records with information about the sexual partnering of the patient were identified (n = 13,509). Then, opposite-sex-partnered and same-sex-partnered (SSP) patients were compared for prevalence of common chronic conditions and clinic utilization.**

Results: **Only 44.20% of medical records included information about patients' sexual partners. Both male and female SSP patients were more likely to be lower socioeconomic status, be a current or former smoker, and be diagnosed with substance abuse/dependence and depression.**

Conclusions: **The findings suggest the need for more consistent screening of the sexual partnering of patients for identifying patients who are at greater risk of poorer health outcomes. However, identifying the sexual partnering of patients may not occur systematically in primary care, and there may be a lack of disclosure by SSP patients to their physicians given the social stigma about same-sex relationships. (J Am Board Fam Med 2016;29:688–693.)**

Keywords: **Asthma, Chronic Disease, Depression, Diabetes Mellitus, Disclosure, HIV Infections, Homosexuality, Loneliness, Medical Records, Obesity, Prevalence, Primary Health Care, Self Report, Sexual Partners, Smoking, Social Stigma, Substance-related Disorders**

Health disparities for gay and lesbian individuals are documented in state-wide data pools,[1–3] national surveys,[4] and long-term data collection surveys looking at the courses of depression and anxiety.[5] In particular, compared with heterosexual individuals, gay and lesbian persons tend to report more substance abuse, smoking,[1] mental distress,[4] loneliness,[5] experience of more adverse childhood events (eg, abuse),[5] obesity,[2] and more chronic illness (eg, human immunodeficiency virus [HIV], diabetes, asthma).[2,4] However, inconsistencies exist across samples, which may be the result of differences in sample demographics, sampling methods, or the influence of other stressful factors such as socioeconomic status (SES) or lack of social support.[4] A limitation throughout the existing literature is the reliance on self-reported health conditions. Only a few studies[6,7] have reported the prevalence of certain medical conditions (eg, obesity, sexually transmitted illnesses) from medical record diagnoses for gay and lesbian patients. In an effort to examine the types of health disparities that present in primary care settings for gay and lesbian patients and to inform the Healthy People 2020 goal of improving health among sexual minorities,[8] this study compared the prevalence of chronic

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medical conditions, clinical utilization, and health status of gay, lesbian, and heterosexual patients seen at Midwestern, university-owned primary care clinics. The goal of the study was 2-fold: (1) to examine an additional sample of lesbian and gay patients based on medical records diagnoses; and (2) to identify specific medical needs and the impact of socioeconomic issues for lesbian and gay patients in primary care.

Methods

Subjects

Patient data and demographics were obtained from the Department of Family and Community Medicine's Primary Care Patient Data Registry (PCPD) at Saint Louis University. The PCPD Registry contains 33,661 patients that utilized 1 of the 3 family medicine or 1 of the 3 general internal medicine clinics in the St. Louis metropolitan area. The PCPD Registry was created by extracting deidentified electronic medical record data files from July 1, 2008, to June 30, 2015. The PCPD Registry contains information generated from patient visits, including International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) codes, laboratory orders and results, prescription orders, referral codes, procedure codes, vital signs, social history, and demographics. The Saint Louis University Institutional Review Board approved the creation and use of this cohort for primary care research.

Eligibility Criteria

For this study, patients has to be ≥18 years old (n = 31,569). Eligible patients were those who reported both being sexually active and the gender of their partner(s) (n = 13,963). This information is collected on a patient history form completed by all new patients and then recorded in the electronic records database. There is no consistent policy across clinics for updating or capturing missing information from the history forms. Of these eligible patients, 13,242 (94.8%) reported opposite-sex partners only and 582 (4.2%) reported only same-sex partners. Because of the small sample size, and in recognition of documented health differences for bisexual persons compared with gay and lesbian persons,[4] 139 patients reporting both opposite- and same-sex partners were not included in this study, leaving a final sample size of 13,509.

Measures

SES was based on a validated neighborhood SES index[9] that uses 7 zip code–level measures from the American Community Survey 5-year (2009 to 2013) census estimates. The measure produced standardized SES categories generalizable to the United States. Psychiatric disorders and physical conditions were included if they were common chronic conditions in primary care. These included depression, anxiety, substance use disorder, smoking, obesity, metabolic and cardiovascular conditions, and pain. The total volume of primary care use was defined as the total number of clinic visits per month, categorized as quartiles. Demographics included age, race, sex, and SES. ICD-9-CM codes were used to define physical and psychiatric conditions. Depression and anxiety were determined by the presence of ≥2 ICD-9-CM codes (any of the following for depression: 296.2, 296.3, 311) for the condition within the same 12-month period. Requiring 2 visits with ICD-9 codes for diagnoses in electronic medical record data has been shown to have excellent agreement with physicians' written medical records.[10,11] We applied the same logic for diagnostic algorithms to define a case of an anxiety disorder. Anxiety was a composite variable indicating the presence of any of the following disorders: anxiety disorder unspecified, generalized anxiety disorder, panic disorder, obsessive compulsive disorder, social phobia, and posttraumatic stress disorder. Any ICD-9-CM code for alcohol or drug abuse/dependence defined any substance use. Smoking was derived from social history data and ICD-9-CM codes for nicotine dependence; it was categorized as never, past, and current.

Metabolic diseases were defined by ICD-9-CM codes and included prediabetes, type 2 diabetes, and hyperlipidemia. Obesity was defined by ICD-9-CM code and/or body mass index ≥30 kg/m^2. Cardiovascular disease included hypertension and a composite vascular disease variable for the presence of any of the following: diagnosis of hypertensive heart disease, ischemic heart disease, myocardial infarction, "other" heart disease, disease of pulmonary circulation, and cerebrovascular disease. Pain conditions included diagnoses for >900 conditions that were collapsed into 5 variables: neuropathy,

headache, back pain, musculoskeletal pain, and arthritis. Last, we created a comorbidity index using the Romano-adapted Charlson Comorbidity Index, which is derived from the presence of 17 health conditions associated with morbidity and mortality.[12] Higher comorbidity index scores indicate worse health.

Analytic Approach

We used a retrospective cohort and treated the entire observation period as a cross section. Comparisons of same-sex partner (SSP) and opposite-sex partner (OSP) groups were made separately for men and women. The χ^2 test was used to test differences between categorical categories (eg, diagnosis, smoking status), whereas an independent samples *t* test was used for testing continuous variable differences (eg, comorbidity index).

Results

Among the full sample of adults, only 44.2% of patient medical records included information about their sexual partners. Results comparing the prevalence of chronic conditions across sexual partnering and gender are consistent with

Table 1. Demographics and Chronic Disease Comparisons among Females, by Sexual Partner Groups (n = 8088)

	Sex of Partner, Gender				
	Opposite Sex, Female (n = 7812)		Same Sex, Female (n = 276)		
	Patients (n)	% or Mean (95% CI)	Patients (n)	% or Mean (95% CI)	*P* Value
Age, mean	7812	41.43 (41.14–41.73)	276	41.25 (39.71–42.79)	.821
White race	4785	61.3 (60.2–62.3)	172	62.3 (56.6–68.0)	.721
SES index					.007
Lowest	1811	23.2 (22.2–24.1)	82	29.7 (24.3–35.1)	
Lower middle	1947	24.9 (24.0–25.9)	79	28.6 (23.3–33.9)	
Upper middle	2206	28.2 (27.2–29.2)	59	21.4 (16.5–26.2)	
Highest	1848	23.7 (22.7–24.6)	56	20.3 (15.5–25.0)	
Clinic utilization*					
75th percentile (highest)	1969	25.2 (24.2–26.2)	89	32.2 (26.7–37.8)	.053
51st-75th percentiles	2091	26.8 (25.8–27.7)	69	25.0 (19.9–30.1)	
26th-50th percentiles	1983	25.4 (24.4–26.3)	67	24.3 (19.2–29.3)	
25th percentile (lowest)	1769	22.6 (21.7–23.6)	51	18.5 (13.9–23.1)	
Depression	745	9.5 (8.9–10.2)	39	14.1 (10.0–18.2)	.011
Any anxiety	662	8.5 (7.9–9.1)	24	8.7 (5.4–12.0)	.897
Any substance dependence	150	1.9 (1.6–2.2)	10	3.6 (1.4–5.8)	.046
Neuropathy	400	5.1 (4.6–5.6)	14	5.1 (2.5–7.7)	.972
Headache	1200	15.4 (14.6–16.2)	51	18.5 (13.9–23.1)	.159
Back pain	1616	20.7 (19.8–21.6)	59	21.4 (16.5–26.2)	.781
Muscle pain	1706	21.8 (20.9–22.7)	63	22.8 (17.9–27.8)	.696
Arthritis	1878	24.0 (23.1–25.0)	77	27.9 (22.6–33.2)	.141
Smoking status					<.0001
Never	5382	68.9 (67.9–69.9)	159	57.6 (51.8–63.4)	
Former	1029	13.2 (12.4–13.9)	41	14.9 (10.6–19.1)	
Current	1401	17.9 (17.1–18.8)	76	27.5 (22.3–32.8)	
Hyperlipidemia	1116	14.3 (13.5–15.1)	31	11.2 (7.5–15.0)	.153
Hypertension	1714	21.9 (21.0–22.8)	57	20.7 (15.9–25.4)	.611
Vascular disease	513	6.6 (6.0–7.1)	19	6.9 (3.9–9.9)	.835
Prediabetes	610	7.8 (7.2–8.4)	25	9.1 (5.7–12.4)	.448
Type 2 diabetes	565	7.2 (6.6–7.8)	16	5.8 (3.0–8.6)	.364
Obesity	3008	38.5 (37.4–39.6)	132	47.8 (41.9–53.7)	.002
Comorbidity index, mean	7812	0.50 (0.48–0.53)	276	0.56 (0.42–0.70)	.394

*Quartiles computed from the distribution of average clinic visits per month.
CI, confidence interval.

Table 2. Demographics and Chronic Disease Comparisons among Males, by Sexual Partner Groups (n = 5421)

	Sex Partner, Gender				
	Opposite Sex, Male (n = 5126)		Same Sex, Male (n = 295)		
	Patients (n)	% or Mean (95% CI)	Patients (n)	% or Mean (95% CI)	*P* Value
Age, mean years	5126	44.53 (44.13–44.92)	295	42.33 (40.65–44.01)	.011
White race	3325	64.9 (63.5–66.2)	220	74.6 (69.6–79.5)	.001
SES index					<.0001
Lowest	1205	23.5 (22.3–24.7)	73	24.8 (19.8–29.7)	
Lower middle	1266	24.7 (23.5–25.9)	104	35.3 (29.8–40.7)	
Upper middle	1273	24.8 (23.6–26.0)	80	27.1 (22.0–32.2)	
Highest	1382	27.0 (25.7–28.2)	38	12.9 (9.1–16.7)	
Clinic utilization*					
75th percentile (highest)	1240	24.2 (23.0–25.4)	72	24.4 (19.5–29.3)	.365
51st-75th percentiles	1284	25.0 (23.9–26.2)	86	29.2 (24.0–34.3)	
26th-50th percentiles	1468	28.6 (27.4–29.9)	74	25.1 (20.1–30.0)	
25th percentile (lowest)	1134	22.1 (21.0–23.3)	63	21.4 (16.7–26.0)	
Depression	280	5.5 (4.8–6.1)	30	10.2 (6.7–13.6)	.001
Any anxiety	260	5.1 (4.5–5.7)	24	8.1 (5.0–11.3)	.022
Any substance dependence	283	5.5 (4.9–6.1)	25	8.5 (5.3–11.7)	.033
Neuropathy	296	5.8 (5.1–6.4)	21	7.1 (4.2–10.0)	.339
Headache	321	6.3 (5.6–6.9)	24	8.1 (5.0–11.3)	.200
Back pain	998	19.5 (18.4–20.6)	46	15.6 (11.4–19.7)	.101
Muscle pain	1126	22.0 (20.8–23.1)	72	24.4 (19.5–29.3)	.326
Arthritis	1173	22.9 (21.7–24.0)	51	17.3 (13.0–21.6)	.025
Smoking status					.011
Never	2898	56.5 (55.2–57.9)	158	53.6 (47.9–59.3)	
Former	865	16.9 (15.8–17.9)	37	12.5 (8.8–16.3)	
Current	1363	26.6 (25.4–27.8)	100	33.9 (28.5–39.3)	
Hyperlipidemia	1283	25.0 (23.8–26.2)	77	26.1 (21.1–31.1)	.680
Hypertension	1507	29.4 (28.1–30.6)	85	28.8 (23.6–34.0)	.830
Vascular disease	611	11.9 (11.0–12.8)	27	9.2 (5.9–12.4)	.152
Prediabetes	473	9.2 (8.4–10.0)	18	6.1 (3.4–8.8)	.069
Type 2 diabetes	553	10.8 (9.9–11.6)	24	8.1 (5.0–11.2)	.151
Obesity	2034	39.7 (38.3–41.0)	108	36.6 (31.1–42.1)	.294
Comorbidity index, mean	5126	0.72 (0.68–0.77)	295	0.92 (0.70–1.14)	.045

*Quartiles computed from the distribution of average clinic visits per month.
CI, confidence interval.

previous findings showing health and socioeconomic disparities (see Tables 1 and 2). Both male and female SSP patients were more likely to be in the lower socioeconomic quadrants compared with OSP patients; they also are more likely to have diagnoses of substance abuse and depression, are more likely to smoke, and are less likely to have quit smoking. For women in the sample (Table 1), women with an SSP were more likely to be diagnosed with obesity. For men in the sample (Table 2), men with an SSP reported significantly more anxiety and scored higher on the comorbidity index.

Discussion

The most significant finding of this study seems to be the lack of information about the sexual partnering of patients. Patients could easily skip over the items about sexual partnering on the history form when they wish not to disclose the information, and physicians may not follow up about the missing information. Despite this lack of information, health disparities seem to persist among patients with an SSP in the sample, which is consistent with previous findings.[2] However, our analysis showed similar risks for various chronic illnesses.

The higher comorbidity score for men with an SSP is likely the result of the higher weight placed on the diagnosis of HIV/AIDS. An HIV/AIDS diagnosis was significantly more likely for the men with an SSP in the sample and remains more prevalent among gay and bisexual male populations nationally.[13] The difference in SES between patients with an SSP and those with an OSP likely creates financial barriers for obtaining quality food for a better diet and gaining access to health insurance and effective and ongoing treatment.[14] Future research should examine possible disparities for sexual minority persons with chronic conditions in the course and treatment of the disease, such as diabetes and heart disease, to assess the long-term impact on health outcomes due to barriers related to obtaining effective treatment.

Implications for Practice and Medical Education

Practically, our findings suggest the need for more consistent screening and assessment of the sexual partnering of patients for identifying patients who are at greater risk of experiencing adverse or traumatic events,[5] discrimination,[15] chronic illness,[2,4] substance abuse,[1] and mental health concerns[4]. In 2011 the Institute of Medicine released a report recommending that health care providers gather information from patients about their sexual orientation and sexual partnering practices,[16] and recommendations for how to do this in a welcoming clinical setting are available.[17]

However, identifying as a member of this marginalized group may present its own barriers. Providers are cautioned to consider their approach in soliciting the disclosure of sexual orientation and partnering in light of the history of stigma, violence, and marginalization experienced by sexual minority persons and the ways that knowing someone's sexual orientation may promote a more negative judgment of the patient,[18,19] as well as increased assessments of mental health or substance abuse conditions only because of the patient's sexual orientation and not his or her reported symptomology—in other words, a bias or negative assumption about the health of a patient based solely on who they are partnered with. Instead, it seems what may be needed is more education and training about the experience of sexual minority persons in health care, and how to complete a sexual health history interview that uses gender-neutral language to open conversation about sexuality and build a trusting relationship between the patient and their health care team.[17,20] A trusting relationship that fosters openness about sexuality will likely allow patients with an SSP to disclose as they feel comfortable and allow the physician to more thoroughly understand the needs of the particular patient they are treating.

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