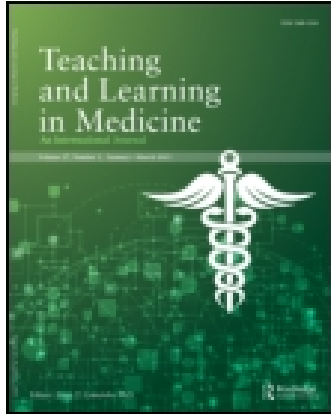


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Lesbian, Gay, Bisexual, and Transgender Patient Care: Medical Students' Preparedness and Comfort

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Lesbian, Gay, Bisexual, and Transgender Patient Care: Medical Students' Preparedness and Comfort

William White, Stephanie Brenman, Elise Paradis, Elizabeth S. Goldsmith, Mitchell R. Lunn, Juno Obedin-Maliver, Leslie Stewart, Eric Tran, Maggie Wells, Lisa J. Chamberlain, David M. Fetterman, and Gabriel Garcia

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Phenomenon: Lesbian, gay, bisexual, and transgender (LGBT) individuals face significant barriers in accessing appropriate and comprehensive medical care. Medical students' level of preparedness and comfort caring for LGBT patients is unknown. **Approach:** An online questionnaire (2009–2010) was distributed to students ($n = 9,522$) at 176 allopathic and osteopathic medical schools in Canada and the United States, followed by focus groups (2010) with students ($n = 35$) at five medical schools. The objective of this study was to characterize LGBT-related medical curricula, to determine medical students' assessments of their institutions' LGBT-related curricular content, and to evaluate their comfort and preparedness in caring for LGBT patients. **Findings:** Of 9,522 survey respondents, 4,262 from 170 schools were included in the final analysis. Most medical students (2,866/4,262; 67.3%) evaluated their LGBT-related curriculum as "fair" or worse. Students most often felt prepared addressing human immunodeficiency virus (HIV; 3,254/4,147; 78.5%) and non-HIV sexually transmitted infections (2,851/4,136; 68.9%). They felt least prepared discussing sex reassignment surgery (1,061/4,070; 26.1%) and gender transitioning (1,141/4,068; 28.0%). Medical education helped 62.6% (2,669/4,262) of students feel "more prepared" and 46.3% (1,972/4,262) of students feel "more comfortable" to care for LGBT patients. Four focus group sessions with 29 students were transcribed and analyzed. Qualitative analysis suggested students have significant concerns in addressing certain aspects of LGBT health, specifically with transgender patients. **Insights:** Medical students thought LGBT-specific curricula could be improved, consistent with the findings from a survey of deans of medical education. They felt comfortable, but not fully prepared, to care for LGBT patients. Increasing curricular coverage of LGBT-related topics is indicated with emphasis on exposing students to LGBT patients in clinical settings.

Keywords lesbian, gay, bisexual, transgender health, patient care, and comfort

INTRODUCTION

Lesbian, gay, bisexual, and transgender (LGBT) people are estimated to comprise between 3% and 4% of the U.S.

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population.^{1,2} In recent years, the medical community has increasingly recognized the unique health needs of LGBT individuals.^{3–5} Barriers to culturally competent care likely play a role in the increased rates of certain cancers, infections, and chronic diseases in these populations.^{6,7} Prejudice against LGBT people persists in the medical community and may compound the negative health impacts of stigmatization in society.^{8,9} Enhancing physicians' preparedness to address the needs of LGBT people and comfort in providing such care may reduce LGBT health disparities.

The Association of American Medical Colleges recommends "comprehensive [curricular] content addressing the specific health care needs of [LGBT] patients" at all medical schools (p. 1).¹⁰ The American Medical Association policy encourages accreditation boards "to include LGBT health issues in the cultural competency curriculum for both undergraduate and graduate medical education" (p. 1).¹¹ The Institute of Medicine recommended further research into health care inequities among LGBT people, including investigation of "provider attitudes and education" because of providers' "lack of training in the health needs of LGBT patients" (p. 64).⁸

Our survey of deans of medical education, concerning LGBT-related curricular content in medical schools in Canada and the United States, found that medical schools teach a median of 5 hours in their required curricula.¹² Trainees need and want additional training on sexuality and on LGBT patient care.^{13–16} Moreover, LGBT-related medical education and increased exposure to LGBT patients have been shown to improve medical students' knowledge, behavior, and beliefs.^{17–19} Whether medical students think that medical schools train them to feel prepared and comfortable caring for LGBT patients is unknown.

In light of our previous study,¹² we hypothesized that medical students thought they were inadequately prepared to care for LGBT patients. Therefore, we investigated students' self-assessed levels of preparedness and comfort in caring for LGBT patients and changes in their levels of preparedness and comfort as a result of their medical education.

METHOD

The Stanford University Institutional Review Board approved the study with required informed consent. We selected a multi-institutional, mixed-methods sequential design employing an online questionnaire followed by focus group interviews.^{20–22}

Primary Outcome Measures

Our main outcome measures were (a) student-reported preparedness (5-point scale) across 16 LGBT-related health topics, (b) comfort (5-point scale) with LGBT health issues, (c) perceived change in preparedness as a result of medical school curricular content (3-point scale), and (d) perceived change in comfort as a result of medical school curricular content (3-point scale). Focus groups approached the same questions using a semistructured, open-ended discussion guide.²³ We defined preparedness as “having the knowledge and training to effectively identify and address LGBT-specific health issues” and comfort as “being personally at ease having a sustained health-care-related interaction with LGBT-identified patients” (see online Supplemental Table 1).

Questionnaire

Our 23-item web-based questionnaire, designed to be completed within 20 minutes (no time limit was imposed for survey completion), was available from June 27, 2009, through May 31, 2010 and open to students at all of the 176 allopathic and osteopathic institutions enrolling students at the time of survey initiation (Supplemental Appendix 1). To evaluate face-validity and clarity, the survey was piloted with 23 medical students from various Canadian allopathic, U.S. allopathic, and U.S. osteopathic institutions. The questionnaire was administered using Opinio (ObjectPlanet, Inc., Oslo, Norway) with 128-bit SSL encryption, in compliance with the U.S. Health Information Protection and Portability Act, as well as Institution Review Board regulations and policies. Informed consent was obtained prior to beginning the survey.

Electronic mail invitations were distributed through national student organizations (American Medical Association – Medical Student Section, American Medical Student Association, Council of Osteopathic Student Government Presidents, and Student Osteopathic Medical Association), school-specific student governments or student activities contacts, and a medical student-targeted Facebook advertisement. To limit sampling bias, LGBT medical student organizations were not approached to distribute the survey. Respondents and nonrespondents were invited to enter a drawing for 50 Amazon.com gift cards valued at US\$25.00.

Analysis inclusion criteria were developed with the American Association for Public Opinion Research (AAPOR) guidelines for coding the completeness of research data (Supplemental Figure 1).²⁴ A total of 9,522 surveys were

initiated. We included questionnaires that were either completed (AAPOR code 1.1, $n = 5,812$) or included responses to every question related to our main outcome measures (Questionnaire Items 10 and 15–20; AAPOR code 1.2, $n = 43$). Respondents who did not complete all questions related to the primary outcome were considered incomplete (AAPOR code 2.1, $n = 3,667$) and excluded.

We chose a comparative analytic strategy based on class year because medical school experiences vary systematically by length of training and thus class year. Students declining to answer their year in school were excluded ($n = 21$). First-year students ($n = 1,572$) were excluded because the questionnaire data and free-response comments suggested they may not be able to accurately evaluate the LGBT content in their curriculum; they responded “don’t know” more often than any other group on nearly every questionnaire item (Supplemental Table 2). Thus, we stratified as follows: 2nd-year students only (henceforth “2Y”; $n = 1,769$), 3rd-year and above students (who presumably have started clinical rotations, henceforth “3+Y”; $n = 2,493$), and all students (i.e., 2nd year and above) in the sample (henceforth “Total”; $n = 4,262$). Respondents who identified as “recent graduates” ($n = 202$) were included in the 3+Y sample because they had a fresh perspective on their medical school curriculum. Differences between 2Y students and 3+Y students were examined using chi-square tests and two proportion t tests, where appropriate. Comparisons were also performed between MD students in Canada, MD students in the United States, and DO students in the United States. In addition, students who selected any LGBT identity (lesbian, gay, bisexual, transgender, queer, questioning [LGBQQ], or another gender/sexual orientation) were compared with students who did not select these identities.

Student preparedness was assessed for 16 LGBT-related health areas that have been previously described.¹² Students who said they were “insufficiently prepared” or “not at all prepared” were categorized as “not prepared.” Those who said they were “prepared,” “well prepared,” or “extremely well prepared” were categorized as “prepared.” Those responding “don’t know” or declining to answer were considered neither prepared nor not prepared. Student comfort was assessed on an overall level using a 5-point scale, rating their level as “uncomfortable,” “somewhat uncomfortable,” “neutral,” “somewhat comfortable,” or “comfortable.”

Descriptive statistics were calculated using Microsoft Excel 2010 (Microsoft Corporation, Redmond, WA); statistical tests were performed using R version 3.0.0 (The R Foundation for Statistical Computing, Vienna, Austria).

Focus Groups

We used preliminary data from the questionnaire to purposively sample institutions and determine lists of schools that scored “high” and “low” in student-reported coverage of

required LGBT-related content. Five institutions (4 “high” performing and 1 “low” performing) agreed to serve as sites for focus groups, and focus group interviewers were blinded to the results of each school’s curricular status. All medical students at the selected focus group sites who were expected to be enrolled in the 2010–2011 academic year were invited to participate via a uniform e-mail sent through their institutions’ deans of medical education. Of the initial respondents ($n = 167$), the focus group interviewers selected up to eight participants for each focus group for diversity in class year, race, sexual orientation, and gender identity. Participants were compensated for their time with a US\$40.00 Amazon.com gift certificate.

Focus groups were designed to last 1 to 2 hours and followed a semistructured script (Supplemental Appendix 2). Based on the research objectives of the questionnaire, the script had two domains based on (a) preparedness and (b) comfort caring for LGBT patients. Each domain had multiple open-ended questions allowing students to discuss their experiences and perspectives on preparedness and comfort, how their preparedness and comfort have changed as a result of their medical education, which sources led to that change, and general thoughts on LGBT-medical education. The script was piloted at one institution with 11 participants. The pilot group was included in the final analysis. Audio recordings were transcribed professionally by Tigerfish Transcription (San Francisco, CA). One audio recording (from the “low”-performing school) was lost due to technical issues and could not be transcribed.

A coding scheme was developed in which individual passages were marked as “Prepared,” “Not Prepared,” “Comfortable,” and “Not Comfortable.” Two individuals manually coded the transcripts independently. An interrater reliability score was determined by dividing the number of passages coded similarly by both coders by the total number of passages coded by either coder. Only sentences coded as synonymous by both coders were included in the analysis. The coders then identified passages that illustrated recurring or thought-provoking concepts from each of the four codes. Filler words (e.g., “like,” “uh,” “you know”) were edited from quotations by the authors for readability, without altering the meaning of the original content. Identifying information (e.g., school names, specific locations) was removed to deidentify individuals and institutions.

RESULTS

Questionnaire Data

The questionnaire was accessed by 9,522 students from 175 of the 176 medical schools. A set of 4,262 students from 170 schools met our analysis inclusion criteria (Supplemental Figure 1). Of the 4,262 students, the majority of students (3,183; 74.7%) were from allopathic (MD-granting) schools in the

United States, the mean age was 26 years, and the majority identified as White (3,293; 77.3%), heterosexual/straight (3,560; 83.5%), and female (2,452; 57.5%). Respondent characteristics are reported in Table 1.

Evaluating the overall curriculum, 1,491 of 4,262 (35.0%) rated their school’s LGBT-related curriculum as “fair.” Nearly an equivalent number rated it as “poor” or “very poor” (1,375 of 4,262; 32.3%) and as “good” or “very good” (1,328 of 4,262; 31.2%). Of DO students in the United States, 76.3% (590 of 773) described their curriculum as “fair,” “poor,” or “very poor” compared with 69.6% (213 of 306) of MD students in Canada and 64.8% (2,063 of 3,183) MD students in the United States. Of LGBT students, 82.4% (563 of 683) described their curriculum as “fair” or worse, whereas 64.3% (2,303 of 3,579) non-LGBT students reported this.

On average, students felt prepared to address a mean of 8 ($SD = 5.3$) of the 16 LGBT-specific subject areas. Student perception of preparedness is presented by subject area in Table 2. Preparedness between 3+Y and 2Y students differed significantly for nearly all 16 subject areas except disorders of sex development. The majority of the 4,262 students reported feeling “more prepared” (2,662; 62.6%), and 1,172 (27.5%) reported “not changed” after medical school training in LGBT-related curricular content. 3+Y students felt a significantly greater increase (1,636 of 2,493; 65.6%) in preparedness during medical school than 2Y students (1,033 of 1,769; 58.4%; $p < .001$; Figure 1A). By school type, 65.7% (201 of 306) of MD students in Canada, 66.1% (2,105 of 3,183) of MD students in the United States, and 47.0% (363 of 773) of DO students in the United States felt “more prepared” as a result of their medical education. MD students in Canada and the United States were more likely to be “more prepared” as a result of their education (both $p < .001$) with no significant difference between MD students in Canada and the United States ($p = .73$). LGBT students (39.5%, 270 of 683) were significantly less likely than their non-LGBT peers (67.0%, 2,399 of 3,579) to say they were “more prepared” as a result of their medical education ($p < .001$).

Respectively, 86.0% (2,130 of 2,479), 82.1% (1,429 of 1,741), and 84.3% (3,559 of 4,220) of 2Y, 3+Y, and all students were “comfortable” or “somewhat comfortable” caring for LGBT patients compared with those who felt “neutral,” “uncomfortable,” or “very uncomfortable.” Of LGBT students, 94.3% (644 of 683) were “comfortable” or “somewhat comfortable” caring for LGBT patients compared with 81.4% (2,915 of 3,579) of non-LGBT students. Of all 4,262 students, 1,972 (46.3%) reported feeling “more comfortable” as a result of their medical school training, and 1,942 (45.6%) reported “not changed” (Figure 1B). Students who were 3+Y were more likely to feel “more comfortable” than 2Y students (1,248 of 2,493, 50.1% vs. 724 of 1,769, 40.9%; $p < .001$). By school type, 47.7% (146 of 306) of MD students in Canada, 49.0% (1,560 of 3,183) MD students in the United States, and 34.4% (266 of 773) DO students in the United States felt

TABLE 1

Characteristics of medical student respondents to an online questionnaire about lesbian, gay, bisexual, and transgender content in their medical curriculum, 2009–2010

Characteristic	Second-Year ^a No. (%)	Third-Year and Above ^b No. (%)	Total ^c No. (%)
School Type			
U.S. Allopathic	1,260 (71.2)	1,923 (77.1)	3,183 (74.7)
U.S. Osteopathic	388 (21.9)	385 (15.4)	773 (18.1)
Canada Allopathic	121 (6.8)	185 (7.4)	306 (7.2)
Year			
2nd-Year	1,769 (100.0)	0 (0.0)	1,769 (41.5)
3rd-Year and Above	0 (0.0)	2,493 (100.0)	2,493 (58.5)
3rd-Year	0 (0.0)	1,188 (47.7)	1,188 (27.9)
4th-Year	0 (0.0)	1,065 (42.7)	1,065 (25.0)
5th-Year or Above	0 (0.0)	38 (1.5)	38 (0.9)
Recently Graduated	0 (0.0)	202 (8.1)	202 (4.7)
Age, years <i>M</i> (<i>SD</i>)	25 (3.2)	27 (3.3)	26 (3.4)
Race^d			
White	1,358 (76.8)	1,935 (77.6)	3,293 (77.3)
East Asian	145 (8.2)	193 (7.7)	338 (7.9)
South Asian	105 (5.9)	124 (5.0)	229 (5.4)
Hispanic or Latino	98 (5.5)	117 (4.7)	215 (5.0)
Black or African American	50 (2.8)	95 (3.8)	145 (3.4)
American Indian or Alaskan Native	27 (1.5)	23 (0.9)	50 (1.2)
Native Hawaiian or Pacific Islander	12 (0.7)	16 (0.6)	28 (0.7)
Other	37 (2.1)	59 (2.4)	96 (2.3)
Decline to Answer	54 (3.1)	68 (2.7)	122 (2.9)
Gender Identity^{de}			
Female	1,006 (56.9)	1,446 (58.0)	2,452 (57.5)
Male	743 (42.0)	1,000 (40.1)	1,743 (40.9)
Transgender or Other	7 (0.4)	18 (0.7)	25 (0.6)
Male-to-Female	1 (0.1)	5 (0.2)	6 (0.1)
Female-to-Male	0 (0.0)	6 (0.2)	6 (0.1)
Other	6 (0.3)	10 (0.4)	16 (0.4)
Decline to Answer	14 (0.8)	26 (1.0)	40 (0.9)
Sexual Orientation^{de}			
Heterosexual/Straight	1,488 (84.1)	2,072 (83.1)	3,560 (83.5)
LGBQQ or Other	273 (15.4)	404 (16.2)	677 (15.9)
Lesbian	44 (2.5)	68 (2.7)	112 (2.6)
Gay	119 (6.7)	187 (7.5)	306 (7.2)
Bisexual	84 (4.7)	127 (5.1)	211 (5.0)
Queer	24 (1.4)	35 (1.4)	59 (1.4)
Questioning	29 (1.6)	22 (0.9)	51 (1.2)
Other	5 (0.3)	13 (0.5)	18 (0.4)
Decline to Answer	28 (1.6)	38 (1.5)	66 (1.5)

Note: Values are no. (%) except where indicated. LGBQQ = lesbian, gay, bisexual, queer, questioning.

^a*n* = 1,769.

^b*n* = 2,493.

^c*n* = 4,262.

^dRespondents were able to select “all that apply” hence the percentages sum more than 100%.

^eDefinitions from questionnaire provided in online Supplemental Table 1.

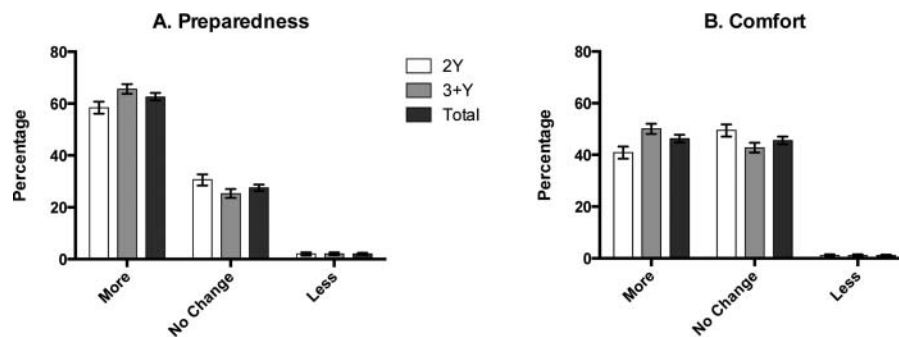


FIG. 1. Medical student self-reported change in preparedness and comfort, by class year, 2009–2010. *Note:* Graphs represent student (A) preparedness and (B) comfort with lesbian, gay, bisexual, and transgender patient care as a result of medical school training, by class year. Error bars represent 95% confidence intervals. Sample sizes: second-year (2Y) = 1,769, third-year and above (3+Y) = 2,493, Total = 4,262.

“more comfortable” as a result of their medical education. MD students in Canada and the United States were more likely to be “more comfortable” as a result of their education (both $p < .001$) with no significant difference between MD students in Canada and the United States ($p = .67$). LGBT students (207 of 683; 30.3%) were significantly less likely than their non-LGBT peers (1,765 of 3,579; 49.3%) to say they were “more comfortable” as a result of their medical education ($p < .001$).

Required preclinical learning (1,564 of 4,262; 36.7%), interactions with LGBT patients (1,056 of 4,262, 24.8%), and personal experiences (1,003 of 4,262; 23.5%) were most influential in increasing student comfort with LGBT patients (Table 3). More MD students in Canada and the United States cited required preclinical teaching as source of increased comfort (113 of 306; 36.9% and 1,262 of 3,183; 39.6%, respectively) than DO students (189 of 773; 24.5%). There is a

TABLE 2

Self-reported preparedness for 16 lesbian, gay, bisexual, and transgender (LGBT) health topics, by class year, from medical student respondents to an online questionnaire about LGBT content in their medical curriculum, 2009–2010

Health Topic	Second-Year No./n (%) ^a	Third-Year and Above No./n (%) ^b	Total No./n (%) ^c	p^d
Human Immunodeficiency Virus (HIV)	1,276 / 1,696 (75.2%)	1,978 / 2,451 (80.7%)	3,254 / 4,147 (78.5%)	< .001
Sexually Transmitted Infections (Not HIV)	1,077 / 1,687 (63.8%)	1,774 / 2,449 (72.4%)	2,851 / 4,136 (68.9%)	< .001
Safer Sex	1,065 / 1,690 (63.0%)	1,730 / 2,442 (70.8%)	2,795 / 4,132 (67.6%)	< .001
Sexual Orientation ^e	1,064 / 1,685 (63.1%)	1,725 / 2,448 (70.5%)	2,789 / 4,133 (67.5%)	< .001
Alcohol, Tobacco or Other Drug Use	901 / 1,674 (53.8%)	1,565 / 2,427 (64.5%)	2,466 / 4,101 (60.1%)	< .001
Barriers to Accessing Medical Care	795 / 1,668 (47.7%)	1,317 / 2,417 (54.5%)	2,112 / 4,085 (51.7%)	< .001
Unhealthy Relationships	756 / 1,661 (45.5%)	1,348 / 2,431 (55.5%)	2,104 / 4,092 (51.4%)	< .001
Gender Identity ^e	801 / 1,674 (47.8%)	1,261 / 2,435 (51.8%)	2,062 / 4,109 (50.2%)	.01
Chronic Disease Risk	764 / 1,671 (45.7%)	1,253 / 2,428 (51.6%)	2,017 / 4,099 (49.2%)	< .001
Disorders of Sex Development/Intersex ^e	783 / 1,665 (47.0%)	1,139 / 2,427 (46.9%)	1,922 / 4,092 (47.0%)	.95
Mental Health	650 / 1,665 (39.0%)	1,246 / 2,434 (51.2%)	1,896 / 4,099 (46.3%)	< .001
Coming Out ^e	676 / 1,671 (40.5%)	1,160 / 2,430 (47.7%)	1,836 / 4,101 (44.8%)	< .001
Body Image	552 / 1,646 (33.5%)	1,003 / 2,413 (41.6%)	1,555 / 4,059 (38.3%)	< .001
Adolescent Health	539 / 1,663 (32.4%)	971 / 2,428 (40.0%)	1,510 / 4,091 (36.9%)	< .001
Transitioning ^e	430 / 1,654 (26.0%)	711 / 2,414 (29.5%)	1,141 / 4,068 (28.0%)	.02
Sex Reassignment Surgery ^e	397 / 1,650 (24.1%)	664 / 2,420 (27.4%)	1,061 / 4,070 (26.1%)	.02

Note: Values are percentage of students who answered they were “prepared,” “well prepared,” or “extremely well prepared” versus those who answered “insufficiently prepared” or “not at all prepared.”

^a $n = 1,769$.

^b $n = 2,493$.

^c $n = 4,262$.

^dThe p values are reported for chi-square, second-year versus third-year and above respondents.

^eDefinitions from questionnaire provided in online Supplemental Table 1.

TABLE 3

Self-reported sources of comfort for LGBT patient care, by class year, from medical student respondents to an online questionnaire about LGBT content in their medical curriculum, 2009–2010

Source	Second-Year ^a No. (%)	Third-Year and Above ^b No. (%)	Total ^c No. (%)	<i>p</i> ^d No. (%)
Required Preclinical Instruction	620 (35.0%)	944 (37.9%)	1,564 (36.7%)	.06
LGBT Patients	291 (16.4%)	765 (30.7%)	1,056 (24.8%)	< .001
Personal Experiences	365 (20.6%)	638 (25.6%)	1,003 (23.5%)	< .001
Panel Discussions	314 (17.8%)	445 (17.8%)	759 (17.8%)	.93
Other Students	282 (15.9%)	445 (17.8%)	727 (17.1%)	.10
LGBT Student Group	271 (15.3%)	408 (16.4%)	679 (15.9%)	.36
LGBT Faculty or Physicians	215 (12.2%)	429 (17.2%)	644 (15.1%)	< .001
Required Clinical Training	123 (7.0%)	446 (17.9%)	569 (13.4%)	< .001
Personal Reading	192 (10.9%)	361 (14.5%)	553 (13.0%)	< .001
Medical School Elective Course	96 (5.4%)	162 (6.5%)	258 (6.1%)	.15
Conferences	64 (3.6%)	165 (6.6%)	229 (5.4%)	< .001
LGBT-Focused Clinic	47 (2.7%)	113 (4.5%)	160 (3.8%)	.002
Elective Clinical Clerkship	21 (1.2%)	84 (3.4%)	105 (2.5%)	< .001
Online Modules (Your Institution)	22 (1.2%)	34 (1.4%)	56 (1.3%)	.73
University Elective Course	25 (1.4%)	25 (1.0%)	50 (1.2%)	.22
Online Module (Other Institution)	10 (0.6%)	26 (1.0%)	36 (0.8%)	.09
Other	68 (3.8%)	97 (3.9%)	165 (3.9%)	.94
No Change in Comfort	537 (30.4%)	603 (24.2%)	1,140 (26.7%)	< .001
Decline to Answer	226 (12.8%)	249 (10.0%)	475 (11.1%)	.004

Note: LGBT = lesbian, gay, bisexual, and transgender.

^a*n* = 1,769.

^b*n* = 2,493.

^c*n* = 4,262.

^dThe *p* values are reported for chi-square, second-year versus third-year and above respondents.

similar trend for LGBT patients (MD Canada: 74 of 306, 24.2%; MD U.S.: 845 of 3,183, 26.5%; DO U.S.: 137 of 773, 17.7%). The most frequently reported suggestions to increase LGBT medical education included clinical experiences (2,995 of 4,262; 70.3%), case discussions of LGBT patients (2,535 of 4,262; 59.5%), and required lectures on LGBT health (2,413 of 4,262; 56.5%; see online Supplemental Table 3).

Focus Group Data

We conducted five focus group interviews with 35 students at five different institutions. One audio recording was lost due to technical issues, resulting in the exclusion of one school and six students from the final analysis. The transcribed focus group recordings represented 29 students from four separate institutions. The group varied in terms of year in school, race, gender identity, and sexual orientation (see online Supplemental Table 4). Coding of the transcripts produced 123 code instances. Of those codes, 104 were noted by both coders, resulting in an interrater reliability score of 84.6%.

Passages coded as “Prepared” occurred 36 times and “Not Prepared” occurred 28 times. For comfort, 39 passages were

coded as “Comfortable” and 20 were coded as “Not Comfortable.”

Quotations from Focus Groups by Code

Prepared. With respect to preparedness, students discussed clinical learning, the role of personal experience, and critical thinking as fostered by exposure (Table 4A).

The only way that you can feel prepared to deal with any population . . . is to work with them directly and to interface with them. And it's one thing to be given lecture slides about these health disparities there in the community. But unless students are forced to engage with a certain kind of population, like LGBT people, then they're not going to feel comfortable asking questions in a history or asking more of those deep probing-type questions. And so if it weren't for my own personal experiences, I probably wouldn't feel prepared at all.

—31-year-old, 1st year, East Asian/Native Hawaiian or Pacific Islander/White, Gay/Queer/Bisexual Male

Not prepared. While discussing not being prepared, students commented on limited training depth, challenges with taking a comprehensive sexual history, and particular

TABLE 4

Select quotations, by code, from focus groups of medical students about the teaching of lesbian, gay, bisexual, and transgender content in their medical curriculum, 2010

A. Prepared

I would agree that personally the best thing [in learning to] be prepared is just sort of the patient exposure, or being in [a city]. Through the [Clinical] Apprenticeship Program, and also doing clerkships. — 23-year-old, 3rd year, South Asian, Straight/Heterosexual Female

Also, I think having said what I said about being prepared, a big part of medicine is just knowing where to look. You can't know everything all the time. Especially as a fourth-year, you start to realize it's not what you know. It's being able to approach it and then figure it out. I think a huge part of that is teaching people how to feel comfortable enough with the language that they know how to find those resources and stuff. — 27-year-old, 4th year, White, Queer Female

B. Not Prepared

I feel less prepared for dealing with intersex disorders and transgender patients. I may not be able to provide the best level of care. But I think by the end of my training, I'll be more prepared than your average medical student maybe.— 23-year-old, 2nd year, White, Gay Male

I would say that I feel like I'm still not very prepared. And any level of preparedness that I do have is mostly from this elective course that I took in the spring, and not from anything in the curriculum. —22-year-old, 1st year, White, Straight/Heterosexual Female

C. Comfortable

I feel that my level of comfort comes from just personal experiences, just in undergrad, or with friends, or with family, whatever that is, and it's not as a result of something I learned in the class. But part of it is, I think, is [that] it's not something you can learn in class. That's the thing. You can't tell someone to feel comfortable with this patient population. It doesn't work like that. Until you can have your own personal experiences, and feel like you're comfortable with someone just at the bar, or out to dinner with someone, you're not going to [feel comfortable]. — 23-year-old, 3rd year, South Asian, Straight/Heterosexual Female

Exposure. I think the biggest thing that's added to my comfort level, 'cause before, it was like this unknown territory. But now it's like, "Okay, I can do this." — 24-year-old, 3rd year, Black/African-American, Straight/Heterosexual Female

D. Not Comfortable

I think we just don't really get . . . in our curriculum, that sort of like terminology that we need. And I feel that that makes me feel very uncomfortable, because sometimes people will use words that I'm not familiar with, and I'm like, "Can you explain in detail what that is?" I mean, so that's a problem. — 22-year-old, 1st year, White, Straight/Heterosexual Female

If there's a homosexual patient, I'm going to make sure the needle doesn't prick me. That's just me. I'm just a little more scared about the HIV. That's a little racist or stereotypical, but I'll be honest with you, I don't want any needle pricking me. — 22-year old, 2nd year, South Asian, Straight/Heterosexual Male

unpreparedness to work with intersex and transgender patients (Table 4B).

I feel like I can interview a patient and not have a problem. But then when it comes to the sexual history, they tell us . . . we should ask, "Do you have sex with men, women, or both?" But then that's all they really tell us, so I don't know where to go from there, how to counsel a patient, what to say to not offend a patient, things like that. — 24-year-old, 3rd year, Black/African American, Straight/Heterosexual Female

Comfortable. The following quotation highlights the feelings of comfort in caring for LGBT people. Students also acknowledged the importance of both personal experiences and organized instruction and exposure (Table 4C).

I guess I feel comfort in the fact that . . . I would always try to do the best for my patient, and I would always try to either look up something or refer them to someone who I think could help their needs. I'd document their needs, but then I'd probably send them

somewhere, figure out where. — 24-year-old, 3rd year, Black/African-American, Straight/Heterosexual Female

Not comfortable. The following quotation highlights expressions of discomfort. Thought-provoking comments focused on culturally competent language and terms, understanding and referring to specific health needs, and concerns of personal safety (Table 4D).

I feel I'm not super-comfortable dealing with transpeople, because I don't know so many of them. I'd be really comfortable finding someone to refer them to. I have no problem being like, "I'm not the person to help you with, but let me help you find somebody." — 25-year-old, 3rd year, White, Straight/Heterosexual Female

DISCUSSION

This study evaluates allopathic and osteopathic medical students' perception of their level of preparedness and comfort caring for LGBT patients. According to students in our

sample, medical school does not provide the breadth and depth of coverage they need to be fully prepared and comfortable to care for LGBT patients. Two thirds (2,866 of 4,262; 67.2%) of students rated their schools' LGBT-related curriculum as "fair," "poor," or "very poor." LGBT students were more critical of their LGBT-focused curricula than non-LGBT students. These results mirror the findings of our survey of deans of medical education (and other studies) concerning the coverage of LGBT-related curricula, in which 70% rated their curricula as "fair" or worse.^{12,16}

Student-assessed preparedness can be viewed as a needs assessment for how LGBT topics are taught in Canada and the United States. A majority of medical students in our sample feel prepared to care for sexual health in LGBT populations but unprepared to provide patient care in areas related to LGBT primary care, transgender healthcare, and healthcare for intersex individuals. These students believe they are least prepared in the same LGBT areas reported by deans of medical education, suggesting an association between teaching these topics in the required curriculum and student perception of preparedness in these areas.¹² In nearly every area, 3rd-year and above students feel more prepared than 2nd-year students for caring for LGBT patients.

Subgroup analysis reveals that MD students in Canada and the United States were more likely to feel more prepared and comfortable caring for LGBT patients than DO students in the United States. LGBT students were less likely to have improved comfort and preparedness, but they also endorse having higher inherent levels of comfort and preparedness in caring for LGBT patients.

Focus groups reveal that students have substantial reservations about caring for LGBT people. Treating transgender patients was a topic frequently related to a lack of comfort and preparedness. In addition, students felt unprepared to translate sexual history information for an LGBT patient into culturally competent care. These results suggest that transgender topics and comprehensive sexual history taking in LGBT populations are areas warranting attention and targeted teaching.

Survey respondents across all analyzed years recommended clinical exposure to LGBT patient to increase curricular content at their schools. In focus groups, they emphasized the need for clinical exposure and suggested that comfort is strengthened when students are exposed to LGBT culture outside of traditional teaching environments. However, one third of medical schools have zero hours of required clinical instruction on LGBT health topics, and only 14% of schools offer any clinical site devoted to teaching about LGBT-patient populations.¹² To improve their comfort and preparedness, students want to find opportunities for clinical interactions with LGBT patients and learn how to translate classroom-based knowledge into practice.

To realize these recommendations for increased clinical experiences with LGBT patients, we, in conjunction with the existing literature and our previous study of deans of medical

education,¹² provide the following recommendations for medical schools: (a) development of a standardized list of required LGBT curricular topics for all medical schools; (b) development of up-to-date LGBT-related curricular materials (or a royalty-free compilation of existing materials) that schools could use to expand their curricula; (c) increased institutional and regional support for faculty development; (d) standardized medical student evaluation via national knowledge and skill examinations (e.g., United States Medical Licensing Examination, COMLEX, Medical Council of Canada Evaluating Examination); and (e) uniform, centralized, and longitudinal curricular content tracking (e.g., via AAMC Curriculum Inventory and Reports, <http://www.aamc.org/initiatives/cir/>) to facilitate future improvements. Arming faculty members with the knowledge and tools needed to create and deliver the content to educate future physicians is critical. This faculty development can be leveraged by including this assessment on national standardized licensing examinations.

Our study has several strengths. It is the first large-scale, multi-institutional survey that evaluated medical students' perceptions of LGBT medical education. It is the largest study to date, and it represents the students' perspectives on what they are learning and where there is room for improvement.^{25,26} The focus groups reached saturation with themes that reinforced the data from the questionnaire. This study combined quantitative data with qualitative data, allowing triangulation and qualitative description of medical students' experiences with curricula.

This work has four main limitations. First, our sample likely has a response bias for students with an interest in LGBT health concerns and may consequently be more critical of their school curriculum than medical students overall. The percentage identifying as LGBQQ here (15.9%) is higher than a recent AAMC-administered nonrepresentative survey of 2nd-year medical students, who reported 5.9% identify as lesbian, gay, or bisexual.²⁷ However, a student's identity does not necessarily result in greater comfort or preparedness in caring for sexual and gender minority patients. Our respondents' median age of 26 years is consistent with their class year distribution and the AAMC-reported median age of 24 years at medical school matriculation. Whereas ethnicity comparisons of our sample with the known medical student population (data supplied by AAMC and AACOM) indicates that our sample was enriched for "White" (77.3% vs. 65%), this, and comparisons of other demographic characteristics, would be inappropriate in the setting of a sample enriched for LGBQQ students due to unknown sex, race, ethnicity, and geographic distributions of these students. Future studies may benefit from specific questions addressing interest in LGBT health to better assess this potential bias. Second, student self-reports are subjective perceptions. Perceptions, however, have significant bearing on a physician's ability to provide care, and thus deserve attention.²⁸ Third, the survey only included 4,262 students out of 83,600 allopathic (73,082 in the United States;

10,518 in Canada) and 18,143 osteopathic students enrolled in the schools surveyed. However, the surveys were complemented by a previous survey of deans of medical education and medical student focus groups. Fourth, sample stratification was based on the assumption that students in their 3rd year and above were engaged in clinical education.

Additional research may help identify appropriate and effective medical curricula delivery methods, particularly given the broad range of student beliefs about the LGBT population and LGBT health. Systematic reform of medical education on LGBT-related topics will be necessary to improve the access of LGBT patients to quality health care and, consequently, to improve their health outcomes.

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SUPPLEMENTAL DATA

Supplemental data for this article can be accessed on the publisher's website.

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