

Comprehensive Internal Medicine Residency Curriculum on Primary Care of Patients Who Identify as LGBT

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Abstract

Purpose: Graduate medical education curricula that provide training on LGBT healthcare are limited. The purpose of this study was to create and evaluate an LGBT curriculum for internal medicine (IM) residents.

Methods: The implicit association test (IAT) measuring implicit bias toward gay individuals was administered as part of a needs assessment. The curriculum was developed by a multidisciplinary team, with objectives derived from the Association of American Medical Colleges' curricular recommendations and the *Fenway Guide to Lesbian, Gay, Bisexual, and Transgender Health*. Surveys assessed residents' perceptions of the importance of primary care for LGBT patients, and their knowledge of and confidence in providing primary care to LGBT patients. Faculty also rated the usability of the curricular materials.

Results: The IAT showed a slight preference for straight people compared with gay people, with an average "D score" of 0.27 ± 0.42 . The importance of receiving education about the primary care of LGB patients was rated as high across the pre- to postsurveys. Knowledge improved with participation in the curriculum (average overall score: 42% pre- vs. 66% postsurvey, $p < 0.0001$). Participants' confidence in their ability to provide information to LGBT patients about resources for community engagement and to implement gender-neutral practices in their clinics increased significantly ($p < 0.05$).

Conclusion: This curriculum pilot demonstrated an improvement in IM residents' knowledge of and confidence in providing care to LGBT patients. Our results suggest that curricular materials can be developed by experts in LGBT health and utilized effectively by nonexpert faculty to increase residents' knowledge and confidence regarding LGBT healthcare.

Keywords: Cultural competency, curriculum/program evaluation, graduate medical education, LGBT health, primary care

Introduction

PEOPLE WHO IDENTIFY as LGBT experience health disparities ranging from suboptimal cancer screening to increased prevalence of mental health disorders, including depression and post-traumatic stress disorder, and increased prevalence of substance use disorder.¹ National-level efforts are underway in the United States to mitigate these disparities. Public and private health insurers have extended coverage and protections based on sexual orientation and gender identity following institution of the Affordable Care Act,² and the Healthy People 2020 initiative includes objectives intended to improve the health and well-being of LGBT individuals.³ Due to lack of training, many physicians do not possess the knowledge and skills necessary to perform a comprehensive history and physical examination to evaluate

concerns pertaining to LGBT individuals.⁴ Therefore, national medical associations in the United States have called for improved provider training to support responsible care for LGBT patients.^{5,6}

In undergraduate medical education (UME) settings, there have been curricular materials that improved knowledge about and attitudes toward providing care to LGBT patients.^{7–12} These include curricula focusing on targeted areas such as taking a comprehensive sexual history, healthcare disparities for LGBT patients, and end-of-life care planning.^{7–12} Notably, one longitudinal study on transgender healthcare demonstrated improvement in student knowledge of gender-affirming care, and in their ability to address systems-level barriers.¹³ In addition, one school created a certificate program in LGBT health, for interested medical students, which spanned multiple topics.¹⁴ Following a seminal study, which showed that U.S.

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medical schools devoted a median of 5 hours of curricular time to LGBT health, a dedicated focus on increasing education on LGBT health arose in the UME realm.¹⁵ One study from 2017 that surveyed residents at one urban hospital system reported that an average of 22 hours of curricular time during UME training was dedicated to LGBT health.¹⁶ Despite receiving increased instruction in LGBT health during medical school, residents still reported discomfort in their ability to care for LGBT patients.¹⁶ This underscores the importance of extending such training into residency, where there remains a prominent lack of evaluated curricular materials.

At the graduate medical education (GME) level, one needs assessment found that 70% of emergency medicine residency programs do not have curricula related specifically to LGBT health.¹⁷ In a survey study of urology residents, education on transgender-related content differed from one region to another, was mostly limited to patient exposure, and was not formalized into a curriculum.¹⁸ Identified barriers for implementing curricula include lack of professional development or expertise, perceived lack of relevance to their course content, and reported lack of instructional time.¹⁹ Particularly relevant to GME is the perception that experts should teach content, as residents are more advanced learners. This poses a specific challenge in LGBT health as it is an area with a widely recognized lack of expert providers, which likely also indicates a scarcity of expert teachers.⁴ This remains a challenge despite the 2015 American College of Physicians (ACP) recommendation that medical schools and residency programs should incorporate LGBT health issues in their curricula.²⁰

Given the shortage of pre-existing LGBT health curricula in GME and the lack of experts in the field, the goal of this study was to create a primary care LGBT curriculum—a planned instructional series to improve resident knowledge of and confidence in providing LGBT primary care—for categorical internal medicine (IM) residents that could be taught by nonexpert faculty.

Methods

Participants

One hundred and fifty-three categorical residents from a large IM residency program and their 35 faculty preceptors were eligible to participate in the study. Residents within the IM program provided care at one of three ambulatory clinics.

Setting

The residency ambulatory curriculum includes case-based “preclinic” conferences that address a wide variety of topics. Our LGBT curriculum was a planned instructional series designed to meet our intended outcome of improving resident knowledge of and confidence in providing LGBT primary care, and was divided into four 45-minute sessions on different LGBT topics, in a case-based interactive discussion format. The curriculum was taught by a clinician educator precepting faculty over a period of 4 months. The faculty assignments were administratively created before the curriculum in the usual manner for our preclinic conferences.

Program development

The curriculum was developed in 2015 by a working group, including trainees from IM, medicine/pediatrics, and psychia-

try residency programs; an associate program director for ambulatory training; and a content area physician expert on LGBT health education. Our objectives were developed from the Association of American Medical Colleges’ (AAMCs’) curricular recommendations⁶ and from the *Fenway Guide to Lesbian, Gay, Bisexual, and Transgender Health*.²¹ The curriculum was divided into four main topic areas, each represented by a separate module. The modules were as follows: (1) understanding LGBT issues; (2) cultural competencies; performing a sensitive history and physical examination; (3) health promotion and disease prevention; and (4) mental health, violence, and reproductive health. Supplementary Appendix SA1 (Supplementary Data are available online at www.liebertpub.com/lgbt)* contains the specific learning objectives for each module.† We created two versions of the written modules, one for residents, which simply included the clinical vignettes, with discussion questions, and a list of the references; and one for faculty, which included resources and detailed answers to the discussion questions. Because one of our objectives was to create a curriculum that could be taught by nonexperts, the faculty did not receive additional professional development aside from the written curriculum. The curriculum was piloted by a group of general IM education fellows for time, ease of teaching, and content. Feedback was incorporated into the final version.

Program evaluation

Implicit association test. We utilized the implicit association test (IAT) to characterize the implicit bias of our participants before instituting the curriculum. The IAT, which has been described extensively, asks participants to pair images that signify either “gay” or “straight” with words that are positive (e.g., lovely, beautiful) or negative (e.g., agony, horrible).^{22,23} The IAT calculates implicit associations by measuring the response times to assign a “relative latency score,” or “D score.”^{22,23} We did not expect the curriculum to change implicit bias, but rather used the IAT as part of our needs assessment for curriculum development.^{24,25} Explicit bias was not assessed.

Project Implicit, the creators of the IAT, provided a unique IAT environment to collect anonymous IAT results from our study participants, who were invited to complete the IAT by e-mail. The participants were not provided with a “result” following the IAT, to minimize a potentially confounding effect on curricular outcomes.

Surveys. In January 2016, the residents were given a pre-survey to assess their perceptions of the importance of primary care for LGBT patients, their confidence in being able to provide such care, and their knowledge of the components of such care. The importance and confidence questions were assessed by a Likert-type scale that ranged from 1 = “not important” to 5 = “extremely important” and 1 = “not very confident” to 5 = “extremely confident,” respectively, and knowledge was assessed by the use of multiple choice questions. Survey

*There is a slight discrepancy in the titles of Module II and Module IV compared to the survey, in which they were referred to as “Cultural competency; performing a sensitive history and physical” and “mental health and societal factors,” respectively.

†For access to the curricular materials, please contact the corresponding author.

questions are included in Supplementary Appendix SA2. We created the survey based on the topics covered in our curriculum, which addressed some of the competencies delineated by the AAMC, as there were no prior validated tools available. It was piloted with a group of IM, family medicine, and adolescent medicine faculty and fellows before administration.

The survey was administered by REDCap and participants were invited by e-mail. We also administered postsurveys immediately following each of the four modules. Each postsurvey contained identical questions to the presurvey, relating to the information contained in the module for that session. We chose to administer the questions after each session, to capture those who had indeed received the content, as residents could potentially miss a session for a variety of reasons such as vacation or night float. The final postsurvey included questions relating to overall satisfaction with curricular materials, ease of use, and faculty preparedness. Each participant was asked to create a unique identifier that was used to link presurveys to postsurveys. Participants were informed that the surveys were voluntary, and for research purposes, with no individual benefit to participation. Consent was assumed for those who proceeded with the surveys. This study was considered exempt by the Institutional Review Board at the University of Pittsburgh under section 45 CFR 46.101(b)(2) of the Health and Human Services code, as it was conducted in an established educational setting.

Statistical analysis

Demographic data were summarized using frequencies and counts. We compared the five-point Likert-type scores from pre- to postsurveys for the importance and confidence questions, and the proportion of correct answers for each knowledge question using Wilcoxon matched-pairs signed-ranks test. The data were analyzed using Stata/SE v14.1 (StataCorp LP, College Station, TX).

Results

A total of 110 respondents completed the IAT before the curriculum; 88 were residents (response rate 57.5%) and 22 were faculty (response rate 62.9%). The average “D score” was 0.27 ± 0.42 (M, SD), which signifies a slight preference for straight people compared with gay people. One hundred residents and 29 faculty completed the presurvey (response rates 65.4% and 82.9%, respectively; Table 1). Of these, 69% of the residents and 90% of the faculty reported having less than 2 hours of prior exposure to formal LGBT-related curricular content.

Of the presurvey respondents, 57 residents and 14 faculty completed the first postsurvey (response rates 57% and 48%, respectively). The response rates for the 2nd, 3rd, and 4th postsurveys were 31% and 17%; 25% and 10%; and 27% and 38%, respectively. Of note, there was no change in the postgraduate year level or gender distributions of the respondents over each time point ($p=0.671$ and $p=0.886$, respectively).

Improvements were seen in all the outcomes we examined. The importance of education about the primary care of LGB patients for IM residents was considered to be high at baseline (mean 4.0 on a 5.0-point Likert-type scale) and increased markedly at trend levels ($p=0.079$). The results of the confidence and knowledge outcomes are presented in Table 2. Resident confidence in their knowledge of LGB primary care also

TABLE 1. DEMOGRAPHICS OF SURVEY PARTICIPANTS

Descriptor	Resident participants on presurvey (n = 100)	Faculty participants on presurvey (n = 29)
Postgraduate year level, n (%)		Not applicable
PGY 1	28 (28)	
PGY 2	37 (37)	
PGY 3	32 (32)	
Not answered	3 (3)	
Age, mean \pm SD	29.0 \pm 5.3	42.5 \pm 11.8
Gender, n (%)		
Male	38 (38)	Not available
Female	53 (53)	Not available
Not answered	9 (9)	
Prior exposure to LGBT-related content, n (%)		
<1 h (45 min)	41 (41)	17 (59)
1–2 h (1.5 h)	28 (28)	9 (31)
3–4 h (3.5 h)	20 (20)	2 (7)
>5 h (5.5 h)	11 (11)	1 (3)
Prior exposure to LGBT-related content in hours, mean \pm SD	2.0 \pm 1.6	1.3 \pm 1.1
Survey participation, n (%)		
Pre	100 (100)	29 (100)
Post 1	57 (57)	14 (48)
Post 2	31 (31)	5 (17)
Post 3	25 (25)	3 (10)
Post 4	27 (27)	11 (38)
No. of surveys participated, n (%)		
1	33 (33)	15 (52)
2	30 (30)	3 (10)
3	18 (18)	9 (31)
4	13 (13)	0 (0)
5 (i.e., all 5 surveys)	6 (6)	2 (7)

increased markedly at trend levels ($p=0.063$).[‡] Confidence increased significantly in the ability to provide information to LGBT patients about resources for community engagement; recognize health disparities[§] associated with sexual orientation; implement gender-neutral practices in their clinic; identify implicit bias toward LGBT people; counsel women who have sex with women on appropriate practices to prevent sexually transmitted infection (STI) transmission; understand legal issues in regard to surrogate decision making for non-married same-sex partners; and counsel same-sex couples on options for biological parenthood (all $p < 0.05$). Resident confidence in eliciting disclosure of gender identity and identifying patients who may benefit from pre-exposure prophylaxis ($p < 0.10$) also increased at trend levels.

Knowledge improved with participation in the curriculum (average overall score: 42% presurveys vs. 66% postsurveys, $p < 0.0001$). Notable significant improvements occurred regarding knowledge of the percentage of individuals who self-identify as LGBT in the United States, which sexual

[‡]The results for Q15 regarding confidence in knowledge of primary care of transgender patients are not included because the question was erroneously excluded from the post-test, therefore there is no pre-post comparison.

[§]The survey instrument refers to “increased health risks” associated with sexual orientation, however, in retrospect, use of “health disparities” is more appropriate.

TABLE 2. CURRICULUM EFFECTS ON RESIDENT CONFIDENCE IN AND KNOWLEDGE OF LGBT PRIMARY CARE

	N	Pre	Post	p ^a
Confidence^b				
Knowledge of LGB primary care	45	2.84 ± 0.88	3.13 ± 0.66	0.0633
Identify resources for community engagement	45	2.02 ± 0.69	2.98 ± 0.92	<0.0001 ^c
Recognize increased health risks	45	3.00 ± 0.85	3.40 ± 0.69	0.0083 ^c
Implement gender-neutral practices	31	3.10 ± 0.83	3.52 ± 0.57	0.0062 ^c
Identify implicit bias toward LGBT people	31	2.87 ± 0.56	3.39 ± 0.76	0.0008 ^c
Elicit disclosure of gender identity	31	3.39 ± 0.76	3.68 ± 0.60	0.0999
Identify patients who may benefit from pre-exposure prophylaxis for HIV	25	3.08 ± 0.81	3.44 ± 0.82	0.0883
Counsel WSW on practices to prevent STI transmission	25	2.24 ± 0.88	3.16 ± 0.94	0.0006 ^c
Understand legal issues in regard to healthcare surrogate decision making for nonmarried same-sex partners	26	1.88 ± 0.65	3.35 ± 1.02	<0.0001 ^c
Counsel same-sex couples on options for biologic parenthood	26	1.73 ± 0.67	2.85 ± 1.05	0.0002 ^c
Knowledge^d				
Understand effects of minority stress	45	0.51 ± 0.51	0.67 ± 0.48	0.0896
Describe sexual orientation	45	0.76 ± 0.43	0.69 ± 0.47	0.4669
Identify percentage of LGBT people in the United States	45	0.09 ± 0.29	0.76 ± 0.43	<0.0001 ^c
Identify breast cancer risk factors for lesbian women	45	0.76 ± 0.43	0.96 ± 0.21	0.0067 ^c
Define gender expression	45	0.42 ± 0.50	0.76 ± 0.43	0.0053 ^c
Define gender dysphoria	31	0.19 ± 0.40	0.16 ± 0.37	0.7055
Identify situations in which to elicit details about sexual practices	31	0.87 ± 0.34	1.00 ± 0.00	0.0455 ^c
Define gender affirmation	31	0.35 ± 0.49	0.77 ± 0.43	0.0046 ^c
Use appropriate terminology for genitalia of transgender individuals who have not had gender-affirming surgery	31	0.00 ± 0.00	0.32 ± 0.48	0.0016 ^c
Identify vaccine recommendations for MSM	24	0.33 ± 0.48	0.63 ± 0.49	0.0348 ^c
Know ACIP recommendations for human papillomavirus vaccinations	24	0.08 ± 0.28	0.33 ± 0.48	0.0578
Know guidelines on STI screening for men who have receptive oral sex with men	24	0.08 ± 0.28	0.38 ± 0.49	0.0196 ^c
Counsel on STI risk between female partners	24	0.29 ± 0.46	0.50 ± 0.51	0.1317
Perform Pap testing appropriately in WSW	17	0.82 ± 0.39	0.76 ± 0.44	0.5637
Know which group is most likely to experience sexual violence	26	0.35 ± 0.49	0.58 ± 0.50	0.0339 ^c
Identify disparities in psychiatric disorders	26	0.96 ± 0.20	1.00 ± 0.00	0.3173
Prescribe hormone therapy to a trans woman	26	0.27 ± 0.45	0.23 ± 0.43	0.7630
Identify a healthcare surrogate	26	0.42 ± 0.50	0.73 ± 0.45	0.0114 ^c

The results for Q15 regarding confidence in knowledge of primary care of transgender patients are not included because the question was erroneously excluded from the post-test, therefore there is no pre–post comparison. ^aWilcoxon matched-pairs signed-ranks test.

^bThe confidence questions are reported as the mean of a Likert-type scale: 1, not very confident; 2, minimally confident; 3, somewhat confident; 4, very confident; 5, extremely confident.

^cDenotes *p*-value <0.05.

^dKnowledge questions are reported as the mean proportion of correct answers.

ACIP, Advisory Committee on Immunization Practices; HIV, human immunodeficiency virus; MSM, men who have sex with men; STI, sexually transmitted infection; WSW, women who have sex with women.

minority group is most likely to experience sexual violence in the United States, risk factors for breast cancer in lesbian women, the definitions of gender affirmation and gender expression, situations in which it is important to elicit information about sexual practices, the appropriate vaccines for men who have sex with men (MSM), the CDC guidelines on STI screening for men who have receptive oral sex with men, healthcare surrogates for nonmarried partners, and the use of appropriate terminology for genitalia of transgender individuals who have not had gender-affirming surgery (all *p* < 0.05).

Faculty felt that the curricular materials prepared them to teach (mean 4.36 ± 0.45), and residents agreed that the faculty were prepared and knowledgeable (mean 4.27 ± 0.68). A majority of participants (83.8% of residents and 93.3% of faculty) felt that the curriculum increased their understanding of the challenges faced by patients who identify as LGBT when interacting with the healthcare system.

Discussion

This pilot curriculum successfully increased residents' knowledge of LGBT primary care and increased confidence in being able to provide such care. Consistent with previous studies, our resident participants and teaching faculty had little prior exposure to LGBT-related content.¹⁵ Importantly, this planned instructional series designed to improve knowledge of and confidence in providing LGBT healthcare was successfully implemented by nonexpert faculty.

Faculty and residents showed a slight preference for straight people over gay people on the IAT. Participants' implicit bias ratings were equivalent to the IAT scores collected from medical doctors in a large national study from 2006 to 2012 (females, 0.22 ± 0.5; males, 0.32 ± 0.5).²⁴ This is notable given that the national sample was collected many years before the present study. The stability of implicit bias toward

gay individuals over time is concerning and underscores the need to develop strategies to mitigate and reduce the impact of implicit bias on LGB patients.

Residents and faculty felt that the topics addressed in the curriculum were important, which is consistent with studies showing that even those residents who receive some exposure to LGBT-related educational content during UME still need further training to improve their comfort providing care to patients who identify as LGBT.^{15,16} The learning objectives for the modules are in alignment with the competency qualifiers from the AAMC⁶ and ACP,²⁰ which is important given the few evaluated curricula that comprehensively cover LGBT primary care specifically for IM residents. The present curricular modules address knowledge and confidence and are thus appropriate for learners at early stages, as many residents have little or no exposure to LGBT health during UME. Although the curriculum, as a whole, did yield a statistically significant increase in knowledge, some improvements translated to a still-low overall knowledge level. For example, although the percentage of residents who answered questions accurately on STI screening in MSM who engage in receptive oral sex rose from 8% before to 38% after the curriculum, this improvement is still much less than desired. This curriculum can be revised to better address topics in which knowledge remained low, and a skills-based component could help in this regard, as it could reinforce knowledge in a number of curricular settings.

Another critical finding from this study is that curricular materials developed by experts in medical education and in LGBT health can be utilized successfully by nonexpert faculty. This is important as the lack of subject area experts is a major challenge in increasing resident education in LGBT primary care.¹⁹ Several aspects of our program may have facilitated this ease of implementation and should be considered in development of future curricular materials. First, our precepting faculty have significant experience in conducting small group training using case-based modules in a variety of settings. The LGBT health modules used a similar case-based approach and provided appropriately referenced teaching points. This structural familiarity likely made it easier for our nonexpert faculty to teach the novel curricular content and we would suggest utilizing an educational approach that is familiar to the teachers. Having a discussion-based format allowed the residents, who had varying levels of prior exposure to LGBT-related topics, to learn from each other. A secondary benefit to having the curricular modules taught by the clinical precepting faculty, as opposed to a local subject area expert, was to ensure that all the faculty were exposed to the content.

Limitations

Our study has limitations. First, it was conducted at a single large academic institution, which limits the generalizability of our findings as some institutions may not have local experts in this area or other resources to create a similar curriculum. We did not ask our participants if they identified as LGBT, which could potentially confound our results, as LGB trainees report greater comfort with LGBT health topics than their heterosexual counterparts.¹⁶ In addition, as our evaluation only assessed knowledge and perceptions of importance and confidence, further critical research is necessary to determine whether this educational intervention changes resident

practices or whether additional skills training is necessary to improve care for LGBT patients. Furthermore, although significant positive improvements in knowledge and confidence were noted, we did not ask residents to identify which individual teaching strategies they found most helpful. Understanding which components of the curriculum were effective could aid in refining the curriculum. Another critical next step for this study is to examine long-term retention of knowledge and/or changes in perceptions of importance and confidence, and whether curricula impacted patient care practices. Finally, there was a decline in the response rate from the pre- to postsurveys, which introduces the potential for nonrespondent bias to our results; however, there was not a significant decrease in response rate by training level or gender. Methods to address impact on patient care in future research could include patient satisfaction/opinion surveys, or the use of an objective structured clinical examination.

LGBT health should be taught across the medical training continuum,^{5,6,20} and this study provides an evaluated curriculum for use in GME.^{20,26} This is crucial, especially in primary care specialties, as residents are becoming independent and developing competency in other areas of patient care.^{15,16,26} A unique aspect of this study is that while faculty had low levels of education on LGBT health before our curriculum, they were able to improve confidence and knowledge among our residents through use of the curriculum.

Conclusion

We have shown that general IM faculty who are not subject area experts can, with clearly structured curricular materials, successfully impart knowledge of LGBT primary care to residents. Residents perceived these topics to be important and gained increased confidence in perceived ability to provide such care to LGBT patients. This study provides an effective strategy to teach primary care topics in LGBT health that is easily transferrable and can be disseminated to other residency programs.

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