A First Step in Addressing Medical Education Curriculum Gaps in Lesbian-, Gay-, Bisexual-, and Transgender-Related Content: The University of Louisville Lesbian, Gay, Bisexual, and Transgender Health Certificate Program

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ABSTRACT

Background: Individuals who are lesbian, gay, bisexual, transgender (LGBT), gender nonconforming, and/or born with differences of sex development have specific health needs and significant health disparities exacerbated by a lack of training among health professionals. The University of Louisville LGBT Health Certificate Program used an interdisciplinary approach to increase training, potentially enabling future physicians to provide quality healthcare to LGBT patients. Methods: A pretest-post-test design was used to investigate medical students’ (n = 39) attitude and knowledge outcomes after program participation. Attitudinal items with Likert-type responses were analyzed using the Wilcoxon signed-rank test. Baseline frequency and percentage of correct responses were tabulated for knowledge questions. At both pre- and post-test, the 11 knowledge items were summed to establish a total knowledge score, creating two total scores. The paired sample t-test was used to evaluate the pre- and post-change, and Cohen’s D was used to assess effect size. All P values were two-tailed. Statistical significance was set by convention at P < 0.05. Results: Students correctly answered 69% or less of the knowledge questions at baseline. Total correct knowledge scores significantly increased post intervention with the effect size being large (Cohen’s D = 0.90, P < 0.001). Attitudes significantly increased post intervention on two items (P = 0.019 and P = 0.037). Some attitude items decreased post intervention: students felt it is more challenging to conduct a patient history with a LGB patient (pre-mean agreement = 2.44; post-mean agreement = 2.97, P = 0.018). Conclusions: Medical educators can play a critical role in decreasing LGBT healthcare disparities. The University of Louisville LGBT Health Certificate Program played an important first step in increasing medical students’ knowledge and improving certain attitudes about LGBT patients.

Keywords: Lesbian, gay, bisexual, transgender, health disparities, health education/training programs

Background

Many healthcare providers and medical programs have joined a global discussion regarding inclusive health care for patients

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who are lesbian, gay, bisexual, and transgender (LGBT). LGBT individuals experience severe health disparities which include higher rates of substance abuse and mental illness; higher cancer rates and poorer cancer outcomes due to lack of early detection; and increased risk of sexually transmitted infections, suicide, and trauma.\[^{1,2}\] LGBT patients cite a lack of provider knowledge about LGBT health needs as a barrier to care and can face bias and discrimination in healthcare settings; transgender patients report being harassed or disrespected in a hospital or doctor’s office.\[^{3,4}\] As a result, many LGBT patients avoid medical treatment, including emergency care.\[^{5}\]

In 2013, the World Health Organization released an agenda item aimed at improving the health and well-being of LGBT individuals,\[^{5}\] which sparked a dynamic conversation within the international community about the importance of LGBT health and calls for the inclusion of LGBT care internationally.\[^{6,7}\] Within the United States, The Institute of Medicine, The Joint Commission, and the United States Department of Health and Human Services have all recently highlighted the need for increased health provider education to combat the significant health disparities in this patient population.\[^{4,8,9}\] In 2014, the Association of American Medical Colleges (AAMC) released “Implementing Curricular and Institutional Climate Changes to Improve Health Care for Individuals Who Are LGBT, Gender Nonconforming (GNC), or Born with Differences of Sex Development (DSD).”\[^{10}\] This AAMC publication offers evidence and best practice recommendations for changes in climate and curriculum that are applicable and adaptable to medical education programs across the United States as well as many other countries.

**Medical education and lesbian, gay, bisexual, and transgender health instruction**

A survey of 132 North American medical schools found that the median reported time dedicated to teaching LGBT-related content in the entire curriculum was 5 hours. Only 83 schools taught 8 of the 16 LGBT health topics identified as essential, and only 11 schools taught all topics.\[^{10}\] A needs assessment by the Council of Emergency Medicine Residency Directors found that the average time spent on LGBT health instruction in emergency medicine residency programs was only 45 min per year, signifying that LGBT health instruction may be lacking in graduate medical education.\[^{11}\] The AAMC’s publication provides medical schools with a framework for recognizing existing gaps and challenges schools to realign curriculum to address the needs of LGBT patients. These AAMC guidelines can be adapted and generalized to programs in many countries to help medical educators integrate LGBT-specific health training into various curriculum structures. Implementing such LGBT-specific curriculum requires time, institutional commitment, faculty buy-in, and resources; barriers of implementation include a lack of faculty expertise, discomfort with the topic, and concerns about curricular overcrowding and a lack of instructional time.\[^{12}\] This article shares our initial approach to overcoming these barriers and our process of gaining the momentum needed to implement significant LGBT health curriculum change at the University of Louisville (U of L) School of Medicine.

**Theoretical framework**

The educational intervention discussed in this paper draws from social cognitive theory and builds upon the theory’s concept of behavioral capability, meaning that before a healthcare professional will act they must know what to do and how to do it.\[^{13}\] Knowledge and skill development are essential if we desire for students to implement specific clinical behaviors. Through experience and observing others, students can acquire the skills, knowledge, and self-efficacy to perform specific tasks and achieve certain goals.\[^{14}\] Although learning is an internal process that may or may not lead to behavior change, social cognitive theorists propose that people set goals for themselves and direct their behavior accordingly. It is our hope that the goal of being knowledgeable about LGBT health will ultimately impact students’ clinical practice behaviors; however, specific clinical skill assessment was outside the scope of our evaluation plan. In summary, medical students can learn through observing healthcare professionals, modeling their behaviors, forming their own understanding, and reflecting on their own performance.\[^{15}\] We desired to increase opportunities for medical students to learn from expert LGBT health providers.

**Institutional background and support**

The University of Louisville has approximately 16,000 students, is committed to diversity and inclusion, and includes a thriving and active LGBT Center. Louisville has an LGBT population of approximately 4.5%, ranking 11th among major cities in the United States.\[^{16}\] U of L’s LGBT Center is often the first point of contact for LGBT people seeking healthcare resources, serving as a referral center. The center provides direct service to about 6000 people per year, and community engagement is at the forefront manifesting through volunteerism, active engagement with year-round events, and fundraising activities.

Several factors contribute to this topic’s timelines at U of L. The administration agreed that LGBT health sciences students were in need of additional support and that an institutional climate of inclusion was of utmost importance. LGBT-specific medical education has been on the institution’s radar since at least 2009 when course and clerkship directors were surveyed about LGBT content in the curriculum and estimated that they needed twice as much time as they currently had to adequately address LGBT health issues.\[^{17}\] In the 2013–2014 academic year, an internal survey of medical students (n = 340) found the
majority agreed or strongly agreed that it was important to integrate LGBT health issues into the curriculum; however, some students questioned the need for specific instruction suggesting that there was still work to do in highlighting the specific health needs of this group.

**Education intervention**

U of L leadership agreed that there was a need for specific LGBT health training; however, there were concerns about adding further responsibilities to faculty and adding additional content to already overcrowded curricula. This indicated that attempting to integrate LGBT health content into the formal curriculum or offering lengthy trainings for faculty would be a significant challenge. Program planning and resource procurement took place over the course of one year. Building on the LGBT Center’s existing positive community relationships, expert health providers including physicians, mental health providers, sexual health educators, public health professionals, and LGBT-identified community members agreed to volunteer as instructors of one-hour interprofessional sessions, adding no additional teaching responsibilities to faculty while providing access to LGBT-affirming health professional experts and role models. Thus, the University of Louisville LGBT Health Certificate Program was launched as an elective for students at the Schools of Medicine, Nursing, Dentistry, and Public Health and Information Sciences as a first step in addressing health sciences curriculum gaps.

Any student from any of the schools could participate in any of the optional sessions. The Certificate Program was advertised as an extracurricular offering during students’ lunch break to all schools through e-mail, and paper flyers were distributed. The Certificate Program taught topics relevant to anyone who desired to gain expertise in LGBT health, believing that participants who self-selected into the program would build momentum for these topics among other students and faculty. The 2014–2015 Certificate Program included 11 sessions:

1. LGBT Community Member Panel
2. A Leader’s Role in Addressing LGBT Health
3. Working with LGBT Patients: A Competency, Skills-based Approach
4. How to Make Your Practice LGBT-Affirming
5. Cultural Competency Day: Providing Culturally Competent Care for LGBT Patients
6. LGBT Health Disparities
7. Taking an Inclusive History
8. Ethical and Legal Issues in LGBT Healthcare
9. Transgender Health
10. LGBT Mental Health
11. Meeting the Health Needs of Bisexual Patients

Students could attend any number of sessions; however, they were only eligible for a certificate if they attended four sessions and were permitted to substitute up to two Fenway Institute online modules.¹⁷

We present here an evaluation of medical student participation in the University of Louisville LGBT Health Certificate Program, which was designed to improve attitudes and knowledge about LGBT health.

**Methods**

We investigated students’ self-reported learning outcomes through completion of a survey in Fall 2014 (pre) and in Spring 2015 (post). Study inclusion consisted of (a) any medical student who attended at least one session, up to 11 total sessions, and (b) any medical student who completed both the pre- and post-attitude and knowledge surveys. Students were invited to complete two confidential, paper-based surveys (attitude and knowledge) before their attendance at their first session in Fall 2014. All students attending one or more sessions over the course of the year were invited to complete two confidential, electronic surveys (attitude and knowledge) through e-mail using a SurveyMonkey link after the last offered session in Spring 2015. Both the pre- and post-test surveys were voluntary and included minimal demographic questions (students’ year in school) to protect privacy. Students were also asked which sessions they attended. In addition, students received paper evaluations after each session that asked: (1) How valuable did you find this session (not at all valuable to very valuable response choices)? (2) What is one thing you learned today that you did not know? (3) I believe more LGBT content and training should be offered as part of my program’s required curriculum for all students (strongly disagree to strongly agree response choices), and students had the opportunity to leave open-ended, qualitative feedback. Approval to conduct the Certificate Program evaluation was granted by the University of Louisville Institutional Review Board; the study was determined to be exempt.

**Measures**

The knowledge survey included 11 items, and the attitude survey included 16 items. Both surveys were developed by three of the authors and built upon published surveys that assessed medical providers’ attitudes and knowledge about LGBT individuals and health needs.¹⁸ Some questions addressed LGB health separately from transgender health to distinguish between different health needs or experiences of these two groups. The authors categorized the attitude scale into “General Attitudes Regarding LGBT Patients” and “Clinical Skills Attitudes Regarding LGBT Patients” resulting in six items in the general attitudes category and ten items in the clinical skills attitudes category.

**Data analysis**

Demographic information was summarized by frequency and percentages. Attitudinal Likert-type responses were analyzed using the Wilcoxon signed-rank test. For the knowledge-based questions, the baseline frequency and percentage
correct responses were tabulated. A summation score of all 11 knowledge-based questions was computed for pre- and post-measures, creating two total scores ranging from 0 to 11. Pre- and post-test scores were matched using a unique identifier provided by the student, and paired sample t-test was used to evaluate the pre- and post-change, and Cohen's D was used to assess effect size. SPSS version 22.0 (IBM Corp. Released 2013. IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp.) was used for all statistical analysis. All P values were two-tailed. Statistical significance was set by convention at \( P < 0.05 \).

## Results

### Participants

At the end of 2014–2015, 102 members of the health sciences campus (faculty, staff, and students) were awarded an LGBT Health Certificate, of which 52 were medical students. Of these 52 medical students, 39 met the study inclusion criteria while 13 students did not complete both optional surveys. Participation varied by year in medical school, 22 (56%) MS1 students, 10 (26%) MS2 students, 1 (3%) MS3 student, and 6 (15%) MS4 students participated. Most students (21, 53%) attended four sessions, 11 (28%) students attended 5 or more sessions, and 7 (18%) students attended 1–3 sessions.

### Survey results

Correct responses on knowledge-based items varied from 5 (13%) to 39 (100%) at baseline, demonstrating vast differences in an understanding of LGBT clinical care and health disparities [Table 1]. Medical students' total correct knowledge score significantly increased after their educational experience with the effect size being large (pre-mean = 6.90 [standard deviation (SD) = 1.41]; post-mean = 8.46 [SD = 1.33], Cohen's D = 0.90, \( P < 0.001 \)).

In general, medical students had favorable attitudes toward LGBT patients. Students agreed at a fairly high rate that same-sex sexual behavior is a natural expression of sexuality; however, this agreement significantly increased after the educational experience (pre-percentage agreement = 74%; post-percentage agreement = 90%, \( P = 0.019 \)). Likewise, the question regarding transgender identities being a natural expression of gender in humans also increased (pre-percentage agreement = 77%; post-percentage agreement = 85%, \( P = 0.037 \)) [Table 2].

Medical students generally also had favorable clinical related attitudes, with most students feeling comfortable if they were to become known among their peers as a health professional who cares for LGBT patients (pre-mean agreement = 4.89; post-mean agreement = 4.95). Some attitude items decreased. Post intervention, students felt that it is more challenging to conduct a patient history with an LGB patient than a heterosexual patient (pre-mean agreement = 2.44; post-mean agreement = 2.97, \( P = 0.018 \)), and likewise, students felt that it is more challenging to conduct a patient history with a transgender patient than a cisgender patient whose gender identity matches the gender assigned at birth (pre-mean agreement = 2.77; post-mean agreement = 3.08), though this change was not significant. Table 3 summarizes the pre- and post-clinical attitudes.

Post-session evaluation feedback indicated a desire for even more opportunities for interprofessional interaction among students during the sessions. Multiple responses such as

### Table 1: Frequency and percentage of knowledge questions at baseline (n=39)

<table>
<thead>
<tr>
<th>Questions</th>
<th>Answer (true/false)</th>
<th>Correct responses, frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>When taking a sexual history on an adolescent, it is important to ask</td>
<td>False</td>
<td>5 (13)</td>
</tr>
<tr>
<td>questions about sexual activity before questions about sexual attraction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lesbians are more likely to suffer from obesity than heterosexual women</td>
<td>True</td>
<td>6 (15)</td>
</tr>
<tr>
<td>During male to female sex reassignment surgery, the prostate gland is</td>
<td>False</td>
<td>18 (46)</td>
</tr>
<tr>
<td>removed with the male genitalia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The incidence of depression in elderly gays and lesbians is greater than</td>
<td>True</td>
<td>27 (69)</td>
</tr>
<tr>
<td>in the general population</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The prevalence of cervical cancer and dysplasia has been demonstrated</td>
<td>True</td>
<td>29 (74)</td>
</tr>
<tr>
<td>to be equivalent among lesbians and heterosexual women</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heterosexual women are more likely to be smokers than lesbian women</td>
<td>False</td>
<td>31 (79)</td>
</tr>
<tr>
<td>In a recent survey, 41% of transgender respondents reported having</td>
<td>True</td>
<td>33 (85)</td>
</tr>
<tr>
<td>attempted suicide as compared to 1.8% in the general population</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breast cancer can still occur after bilateral chest surgery for female</td>
<td>True</td>
<td>38 (97)</td>
</tr>
<tr>
<td>to male transsexuals</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Multiple-choice

- The fastest-growing demographics of new HIV infection is
  - Black men
  - Other options:
  - Among coupled gay male households, rates of domestic violence are
  - Three to four times lower than the adult population
  - Identify as a gender different to the one they were assigned at birth
  - Transgender refers to individuals who
  - Other options:
“I never knew that there are high rates of suicide ideation in the LGBT community” suggested that students were learning much of this information for the first time. Some comments suggested that students were gaining awareness of how their own attitudes can impact patient care. Almost all students agreed that sessions should be required within the medical school curriculum and rated the sessions “useful” or “very useful.”

Discussion

This study demonstrated the University of Louisville LGBT Health Certificate Program increases medical students’ LGBT health knowledge and some general attitudes. A few attitude items decreased, suggesting that the intervention may have created awareness about the specific needs of LGBT patients, potentially pointing to the need for more clinical skills training to increase confidence in LGBT patient history and physical examination encounters. Baseline knowledge demonstrated that there is a gap in medical students’ knowledge about LGBT health, indicating the need for this instruction. As noted above, social cognitive theory is an important framework when thinking about skill-related behaviors. We must provide medical students with role models, as well as opportunities to practice, assess, and reflect upon their clinical skills. While our Certificate Program provided increased opportunities for medical students to learn from expert LGBT health providers, its lack of clinical skill practice and reflection is a significant limitation. This reality stresses the importance of eventually integrating LGBT-health training into more structured educational venues, such as required curriculum. This would not only provide students with varied training opportunities but also ensure comprehensive training to all students rather than only those who opt in.

Table 2: Pre- and post-general attitudes regarding lesbian, gay, bisexual, and transgender patients

<table>
<thead>
<tr>
<th>Questions</th>
<th>Disagree (1-2)</th>
<th>Neutral (3)</th>
<th>Agree (4-5)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>LGBT patients deserve the same level of quality care from medical institutions as non-LGBT patients</td>
<td>0</td>
<td>0</td>
<td>39 (100)</td>
<td>5.00 (0.00)</td>
</tr>
<tr>
<td>LGBT patients should only seek health care from LGBT health clinics</td>
<td>37 (95)</td>
<td>2 (5)</td>
<td>0</td>
<td>1.38 (0.59)</td>
</tr>
<tr>
<td>Nurses, dentists, and physicians in private practice have a responsibility to treat LGBT patients</td>
<td>0</td>
<td>0</td>
<td>39 (100)</td>
<td>4.87 (0.34)</td>
</tr>
<tr>
<td>Homosexual patients should disclose their sexual orientation to their health care professional</td>
<td>1 (3)</td>
<td>14 (36)</td>
<td>24 (62)</td>
<td>3.85 (0.84)</td>
</tr>
<tr>
<td>Same sex sexual behavior is a natural expression of sexuality in humans</td>
<td>3 (8)</td>
<td>7 (18)</td>
<td>29 (74)</td>
<td>4.26 (1.02)</td>
</tr>
<tr>
<td>Transgender identities are a natural expression of gender in humans</td>
<td>2 (5)</td>
<td>7 (18)</td>
<td>30 (77)</td>
<td>4.21 (0.92)</td>
</tr>
</tbody>
</table>

LGBT=Lesbian, gay, bisexual, and transgender

The Certificate Program is easily deployable at all health sciences schools since it can train large groups of students within a short block of time and uses no faculty to teach. Initially, schools may be challenged to find LGBT health experts in their communities, yet this can be overcome by utilizing community-networking skills. Other obstacles may include finding a time that works for all students’ schedules, the increased workload that participating in the program creates, and securing a location that is attractive and convenient to all students. However, establishing such programs in commonly available scheduled times – such as our lunchtime seminar program – can make fitting this content within a structured curriculum feasible.

The authors recognize that while it is important to train students, it is equally important that attention be paid to training faculty, residents, and other clinical staff. If best practice role modeling is lacking and more senior clinicians are not in support of what students have learned, it will be difficult for students to implement these skills into patient care during clerkships and residencies. Because lunchtime seminar series
are efficient and convenient to many audiences, a Certificate Program could be easily adapted to include faculty, residents, support staff, and community providers.

Our study demonstrates that knowledge and attitude improvement is possible; however, we recognize that lack of provider education is only one small piece of the reason that many LGBT individuals do not receive the high-quality treatment they need and deserve. We understand that LGBT patients may not receive the best care possibly due to providers’ explicit bias, as well as their less-conscious implicit bias against LGBT individuals.[19] If we are to change the way care is provided for this population, we must step up to this very difficult task of understanding how a physician’s own belief system impacts care and how to offer the best possible care for all patients in the midst of this challenge.

### Conclusions

This article summarized our initial efforts in increasing LGBT health training. Disparities in the LGBT patient population are well-documented and present substantial challenges to clinical care. Medical educators can play a critical role in decreasing these disparities. Faculty, residents, and medical students...
alike must recognize these disparities as critical concerns and focus specific training on existing attitude and knowledge gaps that perpetuate the problem. Each school's feedback about the Certificate Program was uniformly positive, and as hoped, this increased others' interest in participating in the upcoming year's programming.

The Certificate Program was a catalyst for developing a strong working relationship between the LGBT Center and the Office of Undergraduate Medical Education. It played a significant role in gaining the momentum needed to implement comprehensive curriculum change that will involve expansion to all students at the medical school. The LGBT Center, the Office of Undergraduate Medical Education, and the Health Sciences Center's Office of Diversity and Inclusion have now formally committed to partner on an LGBT health curriculum project: "eQuality: Leading Medical Education to Deliver Equitable Quality Care for all People, Inclusive of Identity, Development, or Expression of Gender/Sex/Sexuality." eQuality will map the newly released AAMC competencies into years one through four of medical school. This will be achieved in collaboration with national partners, including experts from the AAMC Advisory Committee on Sexual Orientation, Gender Identity, and Sex Development. As LGBT content is integrated into the required curriculum, the Certificate Program will likely transform into a platform for targeted, interprofessional education while continuing to effectively incorporate engaged community members. In addition, the Certificate Program helped us secure dedicated space to establish a health sciences LGBT Center.

Future directions of the Certificate Program include (1) increasing opportunities for interprofessional education; (2) increasing interactions between students and LGBT patients so students can understand how LGBT patients are impacted by poor health care delivery; (3) including sessions on LGBT ethical and legal issues in healthcare; (4) offering faculty development opportunities to all clinical departments; (5) developing evaluations to further understand student perceptions; (6) hosting national experts to speak at our Medical Education Grand Rounds series to further build momentum among faculty, administration, and students about LGBT-specific health needs, and (7) changing the location of the sessions on a rotational basis throughout all four health professional schools. The social and health needs of the DSD-affected population have previously been outside the scope of the LGBT Center, and we have involved experts to include this content in the Certificate Program going forward.

Although we understand there is much work to do, we believe the Certificate Program is a great starting point and presents a real opportunity for replication at other institutions committed to training future healthcare providers to be competent and compassionate in their delivery of care to individuals who are LGBT, gender nonconforming, or born with differences in sex development.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

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