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Health Care for LGBTQ+ Youth: A Case-Based Workshop for Medical Students and Pediatric Residents

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Abstract

Introduction: Undergraduate medical education and graduate medical education lack formal curricula on providing care for lesbian, gay, bisexual, transgender, and queer/questioning (LGBTQ+) youth. The onset of the COVID-19 pandemic has led to further challenges in delivering engaging, patient-centered education on LGBTQ+ health. **Methods:** We developed a 90-minute case-based LGBTQ+ health curriculum delivered twice: to fourth-year medical students (in person only) and to pediatric residents (in-person and virtual options). Learners worked in small groups to engage in self-directed learning to review cases with associated questions, followed by a faculty-facilitated discussion and didactic component. Additionally, residents received a 45-minute patient-and-caregiver panel to explore lived experiences within the trans and nonbinary community. Retrospective pre-post surveys assessing knowledge, comfort, and perceived clinical impact were analyzed via paired *t* tests and descriptive statistics. **Results:** Sixty-two learners completed our evaluation, including 19 residents and 43 medical students. After the curriculum, we noted significant improvement in learners' perceived knowledge and comfort in all surveyed competencies; >90% of learners noted the curriculum was well organized and engaging, with the patient–caregiver panel marked as a highlight. **Discussion:** A multimodal curriculum using case-based, problem-based learning and a patient–caregiver panel can be a promising method of providing interactive and up-to-date education on LGBTQ+ health care. This model can also be used to provide education on other medical education topics that are constantly evolving and lack national standardization.

Keywords
Gender, Pediatrics, Queer, Sexuality, Case-Based Learning, Gender Identity, History Taking, LGBTQ+, Problem-Based Learning, Diversity, Equity, Inclusion

Educational Objectives

By the end of this activity, learners will be able to:

1. Conduct an appropriate and comprehensive history related to sexual health and gender identity, utilizing basic terminology, concepts, and inclusive language.
2. Identify inclusive language to integrate into their clinical practice.
3. Describe the range of gender-affirming care options for transgender and gender diverse youth.
4. Identify inclusive strategies for taking a sexual history and providing sexual and reproductive health counseling.
5. Describe barriers and facilitators to care that LGBTQ+ individuals experience.

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Introduction

Lesbian, gay, bisexual, transgender, and queer/questioning (LGBTQ+) adolescents face significant health disparities in substance use, sexual health, and suicide compared to their peers and are less likely to access routine medical care.[1] This can in large part be attributed to minority stressors from their community as well as stigma and lack of comfort with health care providers.[2]

While societal factors contribute to this barrier to care, lack of knowledge and comfort related to LGBTQ+ health care amongst trainees and pediatricians likely plays a critical role.[3] Unfortunately, most medical schools and residency programs have limited formal education on the unique health care needs of and best practices for LGBTQ+ youth.[4] In 2014, the Association of American Medical Colleges (AAMC) published recommendations for educational changes to improve care for LGBTQ+ patients.[5] However, only a few curricula have appeared since,[6] most of which focus on history taking or eliminating implicit

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biases, with some incorporating patient voices into the experience.[7-10]

Moreover, the landscape of LGBTQ+ health care is constantly evolving. In the past couple of decades alone, terminology and best practices related to the care of LGBTQ+ patients have undergone dramatic changes.[11] Periodic reassessment of medical education is warranted to ensure care delivery meets modern standards.

In light of the COVID-19 pandemic, there is a new demand for virtual or hybrid forms of medical education.[12] Additionally, with the increasing adoption of the academic half-day (AHD) in GME,[13,14] opportunities open for more comprehensive and multimodal curriculum delivery on LGBTQ+ health. To our knowledge, no such curriculum addressing care for LGBTQ+ youth has been published.

In 2020, an initial in-person case-based LGBTQ+ health curriculum for fourth-year medical students was published by a member of our project team.[15] Participant feedback analysis from that project demonstrated a need for an evidence-based education that would be interactive, engaging, applicable to clinical practice, and centralized around the patient perspective. We aimed to update that curriculum to include current terminology, a more patient-centered approach,[16] and a hybrid model that could be implemented in various learning environments, including both a medical student transition-to-residency course and a pediatric resident AHD educational session. The majority of published LGBTQ+ health curricula center on history taking,[17,18] are delivered in more didactic formats,[7,9,19] and primarily focus on adult populations.[20,21] Our curriculum expands on this work with updated evidence and terminology,[22] as well as an additional focus on approaches to and considerations for management of common pediatric clinical scenarios.

Methods

Design

Our curriculum adapted the 2020 case-based model of Roth, Friedman, Gordon, and Catallozzi and colleagues to address new content and employ new education-delivery models.[15] We developed our learning objectives and curriculum based on the needs assessment and feedback findings from the prior project and an interval literature review. Educational areas of interest from the prior project, such as gender dysphoria, puberty suppression, hormonal and surgical transitioning, mental health, and community resources, were expanded, with additional content incorporated, including inclusive language, reproductive health, and legal and policy considerations. In addition, objectives with a clinical focus on improving comprehensive care and centralizing the patient's perspective were added as critical components. We thus reformulated the curriculum to reflect current perspectives on LGBTQ+ health care, incorporate more interactive components based on existing models, and fit various learners via different mediums, as remote learning practices were constantly evolving. Ultimately, we strove for an updated case-based approach with a problem-based learning (PBL) methodology that incorporated patient insight to promote learner engagement, empathy, and lifelong self-directed learning.

Setting

Our curricular session was implemented at two academic institutions with different learner levels and environments during the same academic year (Table 1). We delivered one session in person to fourth-year medical students at the Columbia University Vagelos College of Physicians and Surgeons during their Ready-for-Residency curriculum (hereinafter, Medical Student Session). The Ready-for-Residency curriculum was a mandatory series designed to prepare medical students in their final year for starting residency. As in-person attendance was required for this series, a virtual option was not made available. We delivered the other session to pediatric residents at the Children's Hospital at Montefiore during their 18-month AHD curriculum (hereinafter, Resident Session). AHD served as a weekly resident education model that used a myriad of educational techniques, including traditional lectures, skills workshops, gamification, simulations, and small-group discussions, to cover high-yield pediatric topics in a group setting where residents had been excused from clinical duties. In alignment with residency pandemic policies, we delivered the latter via a hybrid approach that provided learners with the opportunity to choose in-person or virtual participation.

Structure

Learners in the Medical Student Session received only a case-based PBL session, while those in the Resident Session received the same case-based PBL session plus a patient–caregiver panel, given an initiative in the residency program to incorporate more patient and caregiver voices in the AHD curriculum. No prerequisite reading or knowledge was required to participate. The case-based curriculum included a 90-minute PBL session focused on LGBTQ+ care best practices. At the start of the session, learners were divided into small groups or virtual breakout rooms, and each group was assigned a case with associated questions to review (Appendix A). Learners then had time to research and discuss assigned cases using personal knowledge and online resources. A group

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Table 1. Session Comparison

Category	Medical Student Session	Resident Session
Learners	Fourth-year medical students	Pediatric residents
Attendance	Mandatory	Mandatory
Components	Case-based curriculum	Case-based curriculum, patient–caregiver panel
Educational context	Ready-for-residency curriculum	Pediatric academic half-day curriculum
Setting	In person	Hybrid
Duration	2 hours	3 hours
Facilitators	Pediatric faculty	Pediatric faculty, pediatric residents
Venue	Auditorium	Virtual, auditorium

representative summarized conclusions with the larger group, after which facilitators reviewed answers with the aid of a slide deck (Appendix B) and facilitator guide (Appendix C). Faculty were responsible for cultivating a space that promoted open discussion that was both engaging and thought-provoking. They ensured that answers were correct and thorough and introduced additional information that may not have been discussed.

The Resident Session also incorporated a patient–caregiver panel following the case-based PBL session. To select panelists, we sought recommendations from an academic general pediatrician and an adolescent medicine physician who specialized in care for LGBTQ+ patients as well as a community outreach coordinator at an affiliated sexual health clinic who contacted patients and/or caregivers with whom they had longitudinal relationships and who they felt would appreciate the opportunity to share their experience. We ultimately invited a nonbinary adolescent, a transfeminine adolescent, and a caregiver of a transgender child to ensure a variety of pediatric-relevant perspectives. Learners were queried in advance via anonymous form for their questions, which were sent to panelists ahead of the session (Appendix D) along with details of the educational setting, audience members, session objectives, and logistics for the day. Panelists joined virtually to allow an optimal audiovisual experience for all participants and reduce the burden of pandemic travel. Faculty moderated the 45-minute panel, at which the panelists introduced themselves, answered questions from the audience as well as questions previously prepared by the moderator, and concluded with closing remarks and advice for trainees. Panelists received $25 gift cards for their time.

Survey

After the sessions were completed, we collected feedback via a digital questionnaire using Qualtrics. The questionnaire employed a retrospective pre-post design to assess impact on perceived learner comfort, knowledge, and clinical practice (Appendix E). The questionnaire was adapted from a 2021 yearlong pediatrics LGBTQ+ health curriculum postsurvey to fit a retrospective pre-post design, a more feasible and effective way for participants to self-assess learning after a single session. Designed by Roth, Catallozzi, Soren, Lane, and Friedman based on literature review, AAMC recommendations on LGBTQ+ curricula, and American Academy of Pediatrics recommendations on office-based care for LGBTQ+ youth, the original questionnaire underwent pilot testing with residents and faculty.[23] Our adapted questionnaire included 14 multiple-choice questions and three open-ended questions and was not validated at the time of this project. Pre and post self-reported knowledge and comfort levels were assessed on a 4-point Likert-type scale (1 = *not at all,* 2 = *somewhat,* 3 = *moderately,* 4 = *very*). Perceptions of the curriculum and its clinical impact were scored on a 5-point Likert scale (1 = *strongly disagree,* 2 = *disagree,* 3 = *neither agree nor disagree,* 4 = *agree,* 5 = *strongly agree*). Open-ended questions inquired about strengths, areas for improvement, and additional feedback on the session.

Data Analysis

Data were analyzed via descriptive summary statistics (e.g., percentages, means, standard deviations). Retrospective pre-post scores were analyzed via paired t tests. Comparisons of medical student and resident responses were analyzed via chi-square tests. Open-ended responses were analyzed by three independent reviewers to identify themes.

Results

One hundred and one medical students participated in the Medical Student Session, and 28 residents participated in the Resident Session. Of the 101 in attendance at the Medical Student Session, 43 completed the questionnaire (42% response rate), one of whom submitted only qualitative feedback. Of the 28 learners in the Resident Session, 19 completed the questionnaire (68% response rate), including eight interns (42%), eight second-year residents (42%), and three third-year residents (16%). This resulted in a total of 62 respondents (48% overall response rate).

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A pre-post analysis found a significant increase in participants who were very or moderately comfortable/knowledgeable across all four competencies surveyed (Table 2). After the session, 92% of learners reported being very or moderately comfortable taking a sexual health history (66% pre vs. 92% post, $p < .001$), and 90% reported being very or moderately comfortable taking a history about gender identity (54% pre vs. 90% post, $p < .001$). Additionally, 85% of learners reported being very or moderately knowledgeable about medical or preventive screening guidelines for LGBTQ+ patients after the session (38% pre vs. 85% post, $p < .001$), and 84% of learners reported being very or moderately knowledgeable about medical treatment options for transgender and gender diverse patients (21% pre vs. 84% post, $p < .001$). There was no statistically significant difference between medical students and residents.

Overall, participants agreed that the session was organized (97%) and engaging (92%) and taught them what they hoped to learn (90%). The vast majority felt more prepared to care for LGBTQ+ patients (97%) and intended to change their clinical practice (87%). Mean scores and standard deviations for all learners, medical students, and residents are displayed in Table 3.

The open-ended comments included a variety of recurring themes (Table 4). Both groups felt the session format was engaging and promoted active learning. Residents noted the patient–caregiver panel as a highlight. Interestingly, resident and medical student responses differed most on the amount and type of content included in the session. While several residents felt either that there was too much content covered or that the session was too long (37% of residents), some medical students commented on further topics they wanted covered or felt some topics covered were too basic (19% of medical students).

Discussion

Health care needs, language, and best practices for sexual and gender minority youth are constantly evolving.[24] Therefore, it is imperative that up-to-date educational materials be accessible to educators and learners. Moreover, because medical schools and residencies lack standardized curricula on these topics, there is likely significant variability in learner knowledge at each stage of training.[4] Our adaptable and patient-centered PBL curriculum was highly regarded by nearly all respondents, suggesting that it is a promising approach to barriers to effective LGBTQ+ education. Most other similar published curricula have been single center, so our findings are particularly reassuring as our curriculum was implemented at two different institutions, with different learner levels and distinct educational settings.

Both medical students and residents noted significant improvements in their self-reported comfort taking gender identity and sexual histories and in their perceived knowledge of LGBTQ+ care guidelines and medical treatment. Learners highlighted the session's level of interaction and engagement as key to its success. This can be attributed to a combination of the richness of its up-to-date content, case-based PBL format, and patient-centered features.

The PBL methodology we employed most directly facilitated active participation among learners, consistent with existing literature on PBL use for other subjects.[25] This continues to be an innovative approach, as few UME or GME curricula utilize PBL methodology for LGBTQ+ education.[15] Because cases are semistructured, they can be easily adapted to meet the evolving language and understanding of LGBTQ+ care. The variable feedback from learners on whether the content of the session was well-known or new to them suggests that our audience—who likely represented diverse educational and lived experiences—harbored a wide spectrum of knowledge on LGBTQ+ care. Since PBL relies on peer-to-peer education, it is an ideal modality for teaching learners at different experience levels.[25] More residents than medical students commented on the sessions being lengthy, which may have been due to the longer duration of their educational experience overall, given its additional panel, or to the strain of residency workload compared with that of medical students. While separating these sessions across different days might alleviate this strain, it could be at the cost of a more immersive experience.

Table 2. Retrospective Pre/Post Analysis of Knowledge and Comfort Levels in All Learners, Medical Students, and Residents

Statement[a]	All Learners (N = 61)			Medical Students (N = 43)			Residents (N = 18)		
	Pre	Post	p	Pre	Post	p	Pre	Post	p
Comfort taking a sexual health history	2.8	3.2	<.001	2.7	3.2	<.001	2.9	3.3	.03
Comfort taking a history about gender identity	2.6	3.3	<.001	2.6	3.2	<.001	2.6	3.3	<.001
Knowledge about medical or preventive screening guidelines for LGBTQ+ patients	2.3	3.2	<.001	2.3	3.3	<.001	2.4	2.9	<.001
Knowledge about medical treatment options for transgender and gender diverse patients	2.0	3.1	<.001	2.2	3.2	<.001	1.8	2.8	<.001

[a]Rated on a 4-point Likert-type scale (1 = *not at all,* 2 = *somewhat,* 3 = *moderately,* 4 = *very*).

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Table 3. Perceptions of Session Structure and Clinical Impact

Statement[a]	All Learners (N = 61)		Medical Students (N = 43)		Residents (N = 18)	
	M	*SD*	*M*	*SD*	*M*	*SD*
I intend to change my clinical practice based on what I learned from this session.	4.4	1.0	4.2	1.1	4.8	0.4
I feel more prepared to care for LGBTQ+ patients after this session.	4.6	0.7	4.5	0.8	4.8	0.4
The format of this session was well organized.	4.9	0.4	4.8	0.5	4.9	0.3
The format of this session kept me engaged.	4.6	0.7	4.5	0.8	4.8	0.4
This session taught me what I hoped to learn.	4.6	0.8	4.5	0.9	4.8	0.4

[a]Rated on a 5-point Likert scale (1 = *strongly disagree*, 2 = *disagree*, 3 = *neither agree nor disagree*, 4 = *agree*, 5 = *strongly agree*).

Among the learners who received the panel, many cited it as a highlight. This is consistent with prior literature on the value of patient panels in combination with didactic learning.[26] As care for the LGBTQ+ community continues to change, learning from the firsthand experience of trans and nonbinary individuals actively navigating health care can lead to better understanding and empathy. While there have been prior examples in the literature of panel experiences exploring LGBTQ+ patient perspectives, we are unaware of any published curricula exploring youth and caregiver experiences.[7,9,20,26,27] Prior examples have incorporated a mix of representation across the LGBTQ+ community, as there is significant interplay between gender and sexuality. However, while our case-based curriculum covered several populations in the LGBTQ+ community, our panel focused on the experiences of gender diverse youth and their caregivers. This population was chosen based on growing evidence of significant barriers to care for trans youth endorsed by patients and providers.[28,29] Given substantial learner engagement in the allotted amount of time, we felt narrowing the scope of the panel to center on gender diverse participants, rather than all members of the LGBTQ+ community, was critical to ensuring depth of discussion. For programs with more sessions available, multiple panels focusing on different LGBTQ+ populations may allow for both breadth and depth of discussion.

In both learning environments, most learners reported feeling engaged. Given growing concerns about engagement with virtual or hybrid learning in UME/GME, our curricular format offers a promising model in the postpandemic academic world.[12] Of note, there can be controversy about incorporating patients and caregivers in medical education without formal compensation for their time and knowledge. While the decision on compensation rests with the host institution, hybrid models may improve the accessibility of these sessions and offer the guests more agency to

Table 4. Recurrent Themes and Representative Quotes

Theme	No.[a]	Representative Quotes
The majority of learners appreciated that the case-based and flipped classroom format promoted learner interaction and engaged discussions.	24	"The break-out groups kept it very engaging." "Thought it would not work because residents are burnt out and active learning is much harder in that situation. However, I was pleased by the level of engagement and think residents who do less self-directed learning on this subject likely learned a lot."
The patient panel was a highlight for those who attended.	4	"For the patient and family advocates who joined us: great session, powerful words, impactful stories. As [redacted] said, this is the stuff you can't learn out of the book—we need more stuff you can't learn out of a book." "Interactive session and patient panel. The best [academic half-day] lecture."
Some learners felt that it was too much content for one sitting, especially among residents.	7	"It was a lot of information that by the end I wasn't able to stay engaged." "It's a lot of material to process—try to focus on most important learning objectives—less introductory stuff in the future?"
There was notable variability in learners' perception of trainee knowledge of LGBTQ+-related vocabulary.	5	"Wish we had more time to focus on medical management and maybe a bit less at the beginning on terminology (although very important I think we are all more familiar with this)." "Engaging and well thought out presentation that covered a wide range of important topics."

[a]*N* = 62.

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decide whether virtual or in-person attendance best fits their needs.

Our findings relied on immediate self-reported improvement in knowledge and comfort regarding the presented material, which does not necessarily guarantee true change in knowledge or clinical practice. We did not measure the impact of this curriculum on clinical care to achieve the Kirkpatrick model's highest level of evaluation.[30] Therefore, evaluation of learner performance in simulated standardized patient encounters based on the case scenarios would be of scholarly value.

Our project also involved similar sessions delivered to different levels of learners in different learning environments. When comparing medical student and resident responses, there were no statistically significant differences. However, as our response rate was 42% and 68% for medical students and residents, respectively, we may not have obtained truly representative samples. Additionally, since only one group received the patient–caregiver panel, this may influence the interpretation of our findings, especially as learners were asked to evaluate the composite educational experience. For future iterations, we would recommend reserving dedicated time for completion of pre- and postevaluations and adapting our survey tool to individually assess each learning objective domain and each individual component of the curriculum.

Finally, learners self-selected their small groups based on preference and physical proximity. However, future educators can consider grouping learners based on their self-endorsed comfort level with the material to potentially facilitate more equitable and learner-specific levels of discussion or formally randomizing learners to equalize their knowledge base by the end of the session.

This multifaceted and interactive curriculum was well received and effectively implemented at two institutions in different learner settings. Until LGBTQ+ education is standardized across UME and GME, this curriculum serves as a promising foundation for any level of learner in different educational settings. Furthermore, in the future, this approach can be adopted for similar topics that are constantly evolving and lack national standardization.

Appendices

A. Cases and Questions.docx

B. Health Care for LGBTQ+ Youth Presentation.pptx

C. Facilitator Guide.docx

D. Patient and Family Panel Questions.docx

E. Retrospective Pre-Post Survey.docx

All appendices are peer reviewed as integral parts of the Original Publication.

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