

Assessment of Internal Medicine Resident Preparedness to Care for Lesbian, Gay, Bisexual, Transgender, and Queer/Questioning Patients

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BACKGROUND: Recognizing the unique health needs of sexual and gender minorities (i.e., lesbian, gay, bisexual, transgender, queer/questioning individuals) is critical to providing competent and comprehensive healthcare.

OBJECTIVE: To assess resident knowledge of healthcare issues uniquely affecting sexual and gender minorities as well as the role of online case-based didactics to measure and improve knowledge in the diagnosis and treatment of these patients.

DESIGN: A multicenter online education intervention from December 2016 to April 2018.

PARTICIPANTS: The study population consisted of 833 PGY1-3 residents at 120 internal medicine residency programs in the USA who completed 1018 tests.

INTERVENTIONS: A 1-h online module addressing sexual and gender minority (SGM) health. The test evaluated each resident in four categories: (1) terminology relevant to SGM patients; (2) health disparities and preventive care issues affecting SGM patients; (3) substance use and mental health issues unique to SGM patients; and (4) common sexually transmitted illnesses affecting SGM populations.

MAIN MEASURES: Participants completed a pre-test assessing SGM health knowledge. A didactic module reviewing diagnosis and management of these diseases was then completed, followed by a post-test.

KEY RESULTS: Among 1018 resident respondents, there was no difference between post-graduate year pre-test performance (PGY-1 52%, PGY-2 50%, PGY-3 51%; $p=0.532$) or post-test performance (PGY-1 80%, PGY-2 82%, PGY-3 82%; $p=0.285$). Pre-test and post-test performance of an online didactic module was the same across test categories and patient populations for PGY-1 vs. PGY-2 vs. PGY-3. Residents demonstrated an improvement between pre- and post-test knowledge.

CONCLUSIONS: Baseline knowledge of health issues of sexual and gender minorities, as assessed by pre-test performance, did not change during residency training. An online didactic module introduced trainees to critical issues regarding the care of these vulnerable populations

until such curricula are required in training. Health disparities in LGBTQ communities may improve with improved physician training on clinical care of LGBTQ patients and families.

KEY WORDS: sexual orientation; gender identity; medical education.

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INTRODUCTION

Approximately 3.8% of the US population identifies as a sexual and/or gender minority (i.e., lesbian, gay, bisexual, transgender, or queer/questioning; LGBTQ) with nearly 0.6% identifying as a gender minority.^{1, 2} The unique healthcare needs and experiences of these populations have been characterized by the Institute of Medicine report “The Health of Lesbian, Gay, Bisexual, and Transgender People: Building a Foundation for Better Understanding.”³ Utilizing recent data from the National Health Interview Survey, it has been revealed that sexual minority adults report poorer health status in a number of categories.⁴ Compared to their heterosexual peers, lesbian and bisexual women have higher rates of heart disease⁵ as well as asthma and chronic obstructive pulmonary disease.⁶ Similarly, gay and bisexual men have an increased risk of cardiovascular disease when compared to their heterosexual peers.⁷ Cardiovascular health data remains mixed for transgender individuals⁸ with recent data suggesting increased risk for myocardial infarction and stroke.⁹ Consistently, transgender and gender non-binary individuals have significantly worse self-reported physical and mental health when compared to their cisgender peers.^{1, 10, 11}

The root cause of these and other health disparities has often been attributed to traditional risk behaviors (e.g., tobacco and alcohol). Yet, there is growing consensus that the cause of many health disparities among sexual and gender minority populations includes the deleterious effects of minority stress.^{12–17} Sexual minority adults (i.e., lesbian, gay, bisexual) who experienced high rates of minority stress (i.e., reports of discrimination, rejection, internalized homophobia, and identity concealment) reported more total physical health problems

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(e.g., chronic diseases)¹⁶ and poorer overall health than those who experienced less minority stress.⁴

The 2011 Institute of Medicine report detailing the healthcare needs and experiences of sexual and gender minorities was followed by the Joint Commission and U.S. Department of Health and Human Services' release of their comprehensive plans to address the healthcare needs of sexual and gender minorities.^{18, 19} While each institution highlights the critical demand for education of healthcare providers regarding sexual and gender minority health, the Accreditation Council on Graduate Medical Education does not include sexual and gender minority-specific education as a program requirement.²⁰ Similarly, the American Association of Medical Colleges only provides recommendations for incorporating sexual and gender minority-specific content with no requirement to do so in the curricula of undergraduate medical institutions.²¹

Consequently, medical school curricula have only a median of 5 h dedicated to teaching sexual and gender minority content (i.e., LGBTQ) in the entire curriculum with nearly a third of schools reporting zero hours of LGBTQ-related content.²² Other research has reported that fewer than half of medical students always asked their patients about same-sex behaviors, and the majority rarely or never discussed a patient's sexual orientation; 28% reported they were uncomfortable addressing an LGBTQ patient's health needs.²³ Further, whereas 58% of US internal medicine residency programs covered the health of racial/ethnic minorities in their curricula, only 30% addressed the health of gay men and 11% the health of lesbians.²⁴ This lack of training has been reflected in patient experiences of discrimination and incompetence among healthcare providers when caring for sexual and gender minority patients.^{25–27}

Improved provider knowledge and competence has previously been proposed as a method of reducing healthcare disparities for racial and ethnic minorities. A 2003 Institute of Medicine report "Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care" advocates for cross-cultural education in the health professions as part of a multi-layered strategy to eliminate disparities.²⁸ Although physician education has not been directly linked to improved patient outcomes in this context, we adopted an educational strategy for addressing SGM health disparities— which other institutions have championed to improve the treatment and overall health of racial and ethnic minorities.^{29, 30}

We developed an online didactic module on health issues relevant to sexual and gender minorities, including an assessment of baseline knowledge and knowledge after module completion, and tracked performance based on year of training and training program. We hypothesized that trainees would have limited knowledge of sexual and gender minority health and that a didactic module would provide immediate improvement in knowledge.

METHODS

Content Development

A 1-h didactic module on sexual and gender minority health was developed using a six-step approach to curriculum development (i.e., problem identification and general needs assessment, targeted needs assessment, development of goals and objectives, development of educational strategies, implementation, and evaluation and feedback).³¹ Thirty-eight references were used to support the content of the didactic module. Selected content was utilized to develop a test blueprint on four domains: (1) terminology relevant to SGM patients; (2) health disparities and preventive care issues affecting SGM patients; (3) substance use and mental health issues unique to SGM patients; and (4) common sexually transmitted illnesses affecting SGM populations. A multiple-choice test was developed using established principles of question writing.³² Questions were based on Centers for Disease Control and Prevention (CDC) recommendations and guidelines³³ and Association of American Medical College (AAMC) best practices, as well as expert opinion regarding the care of and preventive health needs of sexual and gender minority individuals and communities.³ Face and content validity were obtained by having questions reviewed by two clinician-educators with expertise in sexual and gender minority health (CGS and SDS); questions were revised based on the experts' comments and consensus was reached on all curricular content (online).

Study Population

The LGBT health module was used by 120 internal medicine residency training programs that had voluntarily implemented the Johns Hopkins Ambulatory Care Curriculum for their trainees.³⁴ The LGBT health module was 1 of 50 didactic modules comprising the curriculum. Study participants were physicians at participating residency training programs who had registered and completed the module (available at <https://www.peaconline.org>). Participating residency training programs included primary affiliates of medical schools with extensive National Institutes of Health funding and several community hospitals. The Johns Hopkins University School of Medicine Office of Human Subjects Research granted exemption to this project, because this survey of educational tests had all identifiers of individual human subjects removed.

Data Collection and Analysis

The test was distributed via the Johns Hopkins Physician Education and Assessment Center (PEAC), described previously.³⁵ The study population consisted of 833 PGY1-3 residents at 120 internal medicine residency programs who completed 1018 tests. Performance data was tabulated from December 2016 through April 2018. Results of incomplete tests were not analyzed. Means and standard deviations were used to describe data distribution. Comparisons between groups were performed using the dependent *t* test and one-way

ANOVA. Responses were grouped based on year of training. Statistical analyses were performed with SPSS software (Version 16, Chicago, IL). All *p* values were two-sided, and a *p* value of < 0.05 was considered statistically significant.

RESULTS

Of the 1018 completed tests, 301 (30%) were in post-graduate year-1 (PGY-1); 348 (34%) were in PGY-2; 369 (36%) were in PGY-3. Respondents were excluded if they identified as PGY-4 or above, attendings, or did not state their level of training.

Knowledge and Management of Healthcare Needs of Sexual and Gender Minorities

Among PGY-1 through PGY-3 respondents, there was no difference between level of training and overall pre-test performance (PGY-1 52.09%, PGY-2 50.32%, PGY-3 51.33%; *p* = 0.532) or post-test performance (PGY-1 80.20%, PGY-2 82.18%, PGY-3 81.57%; *p* = 0.285) (Fig. 1). The highest average pre-test scores by learning objective were for knowledge of sexual and gender minority terminology including sexual orientation, gender identity, and gender expression; the lowest scores were for addressing health disparities and preventive care issues affecting SGM populations (PGY-1 35.8%, PGY-2 31.75%, PGY-3 33.74%). Respondents performed poorly on the pre-test knowledge of screening and management of common sexually transmitted illnesses affecting SGM populations (PGY-1 58.47%, PGY-2 57.66%, PGY-3 60.52%) and substance use and mental health issues unique to SGM patients (PGY-1 60.8%, PGY-2 58.05%, PGY-3 59.89%) (Fig. 2). The highest average overall pre-test scores based on SGM population-specific questions were for transgender health (56.90%), with lesbian and bisexual women’s health scoring the lowest (19.45%) (Fig. 3). Overall test performance improved significantly after completion of the didactic section of the module for each PGY year (*p* < 0.001 for all years) (Fig. 1).

IMPACT OF LEARNER OR GEOGRAPHIC CHARACTERISTICS

Pre-test scoring did not vary by geographic region. Physician performance at residency programs with a New York, NY, or San Francisco, CA, address (*n* = 37), urban centers that have a higher prevalence of sexual and gender minorities, was similar to that from those at other programs (*n* = 981) elsewhere in the USA (51% vs. 51%; *p* = 0.838).

DISCUSSION/COMMENTS

We demonstrated that trainees of all levels are not prepared to address sexual and gender minority health across four broad learning objectives: (1) terminology relevant to SGM patients; (2) health disparities and preventive care issues affecting SGM patients; (3) substance use and mental health issues unique to SGM patients; and (4) common sexually transmitted illnesses affecting the SGM population. Further, trainee pre-test performance demonstrated significant lack of knowledge on sexual and gender minority health during residency. Trainees conflated sexual orientation, gender identity, and gender expression, were unaware of health disparities unique to sexual and gender minorities, including substance use and mental health issues, and were not familiar with preventive healthcare options for sexual and gender minorities.

The significant improvement in post-test scores among respondents at all levels of training suggests that physicians can be trained using an online case-based format to learn how to recognize and address unique healthcare needs of sexual and gender minorities (Appendix). The lack of differences in scores from programs in the New York City, NY, and San Francisco, CA, areas compared with programs in other locations suggests that no additional emphasis is placed on sexual and gender minority health training in areas that have higher proportions of their population that identify as a sexual and/or gender minority. To the authors’ knowledge, there is not

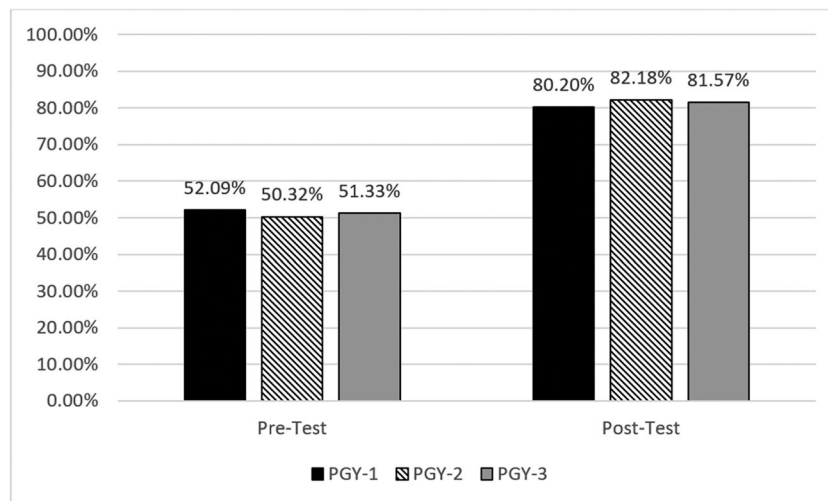


Figure 1 Overall resident pre- and post-test performance. Note: *p* values between PGY years: pre-test = 0.532; post-test = 0.285.

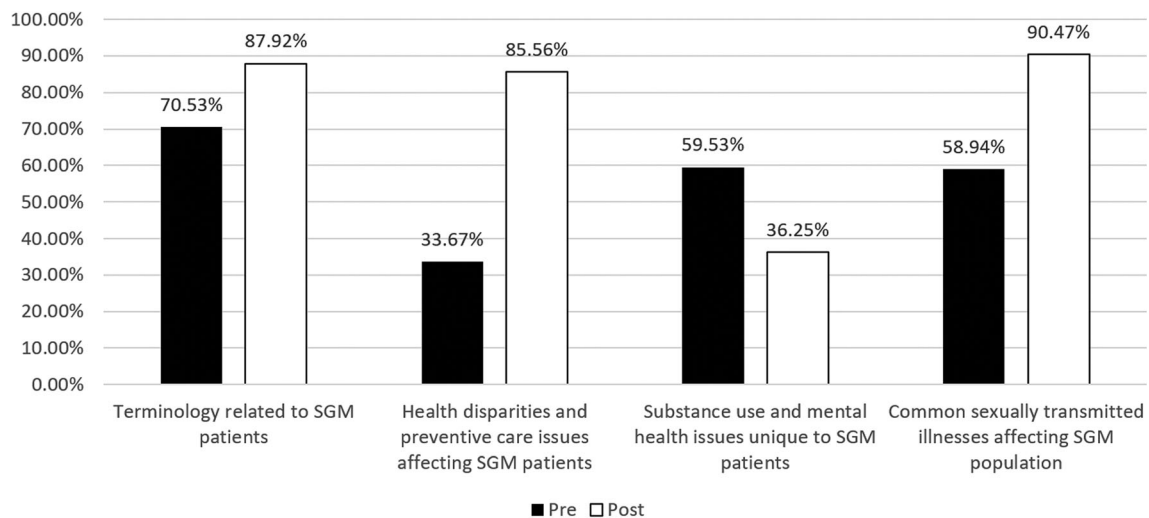


Figure 2 Resident pre-test performance by learning objective. Note: all p values comparing pre- and post-tests <0.001 .

research currently available assessing provider knowledge of LGBTQ health in different practice settings (urban vs. rural) or geographic locations. States in the USA have been ranked according to access to care for transgender individuals; New York and California are among the top 10 “best” states in this analysis, driven in part by relatively low rates of refusal to provide healthcare to transgender individuals.³⁶ It is not known whether lower refusal rates are the result of greater LGBTQ-related clinical knowledge or more favorable provider attitudes towards LGBTQ patients, but further research could explore this question.

While it is possible that junior trainees (i.e., PGY-1) may be less knowledgeable due to deficiencies in their prior training regarding sexual and gender minority health, this does not account for the lack of improvement in knowledge of sexual and gender minority health among more senior trainees (i.e., PGY-2 and PGY-3). This finding warrants further investigation and assessment of post-graduate curricula and exposure to diverse patient populations.

There has been little research conducted regarding the training and preparedness of physician trainees to care for sexual and gender minorities.³⁷ However, sexual and gender minority experiences of discrimination within healthcare, including having to educate providers about their unique healthcare needs, highlight the critical need to improve physician training.^{25–27} Improved physician knowledge has been proposed as a strategy to mitigate health disparities for other minority groups.^{28–30} It is our intention that through improved trainee knowledge of SGM health and healthcare needs, SGM patients will have improved health outcomes and health disparities will be reduced.

There are several limitations to this study. It is possible that physicians who completed the survey did so only because they were seeking additional knowledge of sexual and gender minority health. Yet scores at residency training programs with low use were not lower than scores at residency training programs with high use (data not shown), making selection bias based on poor knowledge unlikely. Physicians who did complete the survey

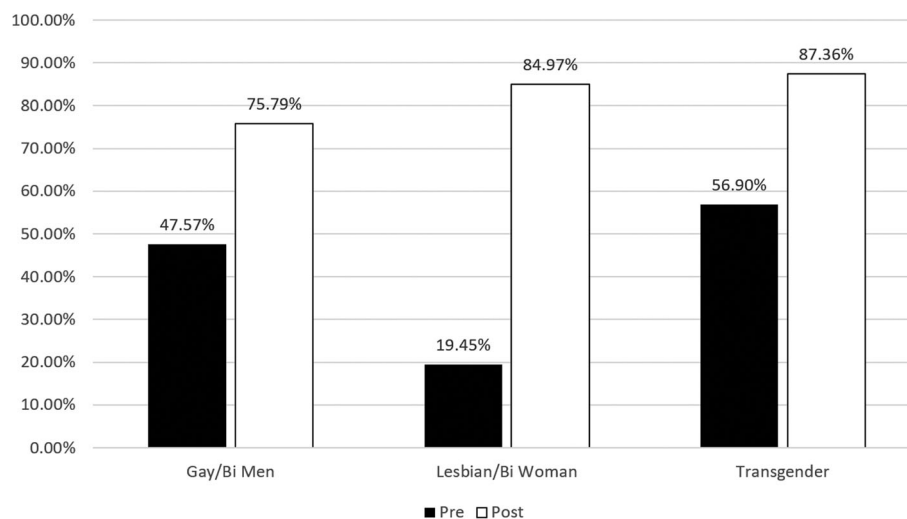


Figure 3 Resident pre-test performance by population-specific questions. Note: all p values comparing pre- and post-tests <0.001 .

were aware that they were completing a module on sexual and gender minority health, which may have had an impact on their differential diagnosis and approach to the case scenarios. Test questions in this module cannot fully replicate the clinical scenarios likely to be seen by physicians caring for diverse sexual and gender minority populations. However, this method permits an accurate assessment of learner knowledge, which is a necessary foundation to provide *clinically* competent care for SGM populations that is evidence-based and meets the healthcare needs of these patient populations. Assessment of *cultural* competence and humility is an important next step, including knowledge of SGM lived experiences, the historical context of LGBTQ movements, and current social factors affecting SGM health and well-being. The assessment of cultural competence and humility is outside the purview of this project. Finally, this study did not measure long-term knowledge retention, which is a significant issue in physician education. One attractive feature of this Internet-based module is that it can be administered frequently to bolster physician knowledge.

This study demonstrates that baseline resident knowledge about sexual and gender minority health is poor, and that knowledge is no better among PGY-3 residents than it is among PGY-1 residents; this underscores the need for required physician education to prepare the physician workforce to provide competent care for sexual and gender minorities. An online didactic module may introduce trainees to critical issues regarding the care of these vulnerable populations until such curricula become required in training. For sustained and broad improvement in trainee knowledge of sexual and gender minority health, such curricular content will likely need to be required of all training programs by accrediting bodies.

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Compliance with Ethical Standards:

Conflict of Interest: The Johns Hopkins University is entitled to payments from purchases of the website curriculum described in this article. The terms of this arrangement are being managed by the Johns Hopkins University in accordance with its conflict of interest policies. Dr. Sisson receives an annual stipend for editorial duties payments related to the website curriculum described herein in accordance with Johns Hopkins University technology licensing and conflict of interest policies. All remaining authors declare that they do not have a conflict of interest.

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