Queering the Medical Curriculum: How to Design, Develop, Deliver and Assess Learning Outcomes Relevant to LGBT Health for Health Care Professionals

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Abstract

Lesbian, gay, bisexual and transgender (LGBT) persons have specific healthcare needs, and experience unique barriers in accessing health services. Research has suggested that medical practitioners are inadequately prepared to address the needs of the LGBT population. While some strategies for training such practitioners within medical schools have been proposed, few have been evaluated, and the best approach to training physicians in LGBT-focused care has yet to be determined. The purpose of this paper is to assess the effectiveness of the LGBT-focused curriculum currently delivered at the Northern Ontario School of Medicine, specifically in terms of its perceived contribution to students’ understanding of LGBT health issues. Results showed that the curriculum introduced at NOSM was effective in increasing knowledge medical students had on LGBT health issues regardless of their pre-existing level of awareness of LGBT health issues. Further, the study found that the level of experience and expertise of the facilitator helping deliver the curriculum was key in achieving this educational goal. We also evaluated three assessment modalities (Multiple Choice Questions (MCQ), Objective Structured Clinical Examination (OSCE), and Clinical Decision-Making Cases (CDM)) for validity and reliability in testing the course objectives. Results indicate that outcomes can be reliably assessed by these three types of assessments.

Keywords: LGBT, Gay, Transgender, Medical Education, Curriculum Development
Introduction

Lesbian, gay, bisexual, and transgender (LGBT) persons experience particular health disparities, and have specific health care needs (Obedin-Maliver et al., 2011). Furthermore, literature has long supported that LGBT people are more likely to be living with particular health issues when compared to the general population (McKay, 2011). These include disproportionate rates of chronic disease risk, infectious disease transmission, substance use, psychiatric disorders, and suicide (McKay, 2011). Additionally, there are a number of health disparities that are unique to lesbian women, gay men, as well as bisexual and transgender persons (McKay, 2011), such as increased risk of gynecological and breast cancers in lesbian women, and anal carcinomas in gay men (Dean et al., 2010; McKay, 2011). Studies have also supported the fact that LGBT individuals experience poorer access to quality care, and are often hesitant to utilize health services primarily due to pervasive systemic discrimination (Mulé et al., 2009). This discrepancy in providing proper care to this population can in part be attributed to a general sense of apprehension or lack of confidence in healthcare providers on the part of the LGBT community. Literature also suggests that medical practitioners are not adequately prepared or trained to engage effectively with LGBT patients in a clinical setting (Stott, 2013; Wittenberg & Gerber, 2009). Additionally, a significant proportion of medical students may have harmful pre-conceptions which may hinder their ability to provide patient-centered care to sexual and gender minority (SGM) patients. For example, Nuyen and colleagues (2015) reported that twenty-seven percent of students had observed judgmental behaviors toward LGBT patients from physicians, and slightly more than half had observed judgmental behaviors toward LGBT patients from their peers. Unfortunately, these various barriers in access to care can further lead to worsening existing disparities, or create new disparities for LGBT patients in need of care (Obedin-Maliver et al., 2011).

LGBT Medical Education

Despite a supported need for improved access to quality care for LGBT persons, medical learners have very little, if any, exposure to the specific needs of the LGBT community in a clinical setting (Obedin-Maliver, 2011). In a study investigating the extent to which medical schools across North America prepare and educate their students to provide quality patient care to LGBT persons, the median reported time dedicated to LGBT-related content across all curricula was 5 hours (Obedin-Maliver, 2011). More importantly, 9 of 132 schools reported 0 hours of training in preclinical years, and 44 reported 0 hours of training in clinical years (Obedin-Maliver, 2011). When training is present, it often varies across school and programs, with a number of curricular strategies being proposed. One such strategy involves multi-modal teaching, where a mixture of didactic teaching, small group discussions, movies and case studies are used to train future doctors to adequately care for LGBT patients (McGarry et al., 2000). Other strategies include educational sessions on LGBT issues paired with standardized patient encounters, and LGBT-related vignettes paired with discussion (Greene, Garment, Avery, & Fullerton, 2014; Lambrese & Hunt, 2013; Sequeira, Chakraborti, & Panunti, 2012).

Even though many curricular strategies have been proposed, few have been evaluated, and thus questions still remain regarding the best approach to training physicians in LGBT-focused care.

In addition to unique medical needs among the LGBT community, previous research suggests that LGBT individuals living in rural communities may have unique experiences that affect one’s sexual identity and sense of community, which may ultimately affect interactions with others, including with medical professionals. Specifically, Kennedy (2010) explored the experiences of men who have sex with men (MSM) living in rural communities, and found that
such men appeared to be fighting against the labels and stereotypes of what it meant to be gay or bisexual within their rural communities, and attempting to broaden their sense of identity (Kennedy, 2010). This is just one example of the unique struggles faced by the LGBT community, especially those living in rural communities. Thus, due to such issues, as well as the disparities in accessing healthcare services among LGBT individuals and lack of education that medical students receive with regards to dealing with this population, the Northern Ontario School of Medicine (NOSM) has developed an LGBT-specific curriculum for undergraduate medical students. This curriculum is designed to teach the social and economic realities faced by LGBT patients and in particular in Northern Ontario, and address the unique health needs of this community.

The undergraduate MD program is built around five themes whose threads run throughout the four years of the program: (1) Northern & Rural Health; (2) Personal & Professional Aspects of Medical Practice; (3) Social & Population Health; (4) Foundations of Medicine; and (5) Clinical Skills in Health Care. During the first two years the program is delivered on campus at Laurentian University in Sudbury and Lakehead University in Thunder Bay with three four-week placements in Indigenous and rural communities in Northern Ontario. Themes 1, 2, and 3 are taught by placing the module in the context of a rural community in Northern Ontario. Through Themes 1, 2, and 3, students learn about the socio-economic conditions and determinants of health of Northern rural communities, as well as challenges facing Indigenous, Francophone and New Canadian immigrant groups, as well as LGBT and other vulnerable populations. Once a week, the students meet in groups of eight to ten students for a two-hour Case Based learning (CBL) session when they explore the challenges of living in Northern and rural communities in regards to themes 1, 2, and 3, such as reliance on single employer for income, few employment opportunities and access to basic and specialized medical care. As well, some modules (e.g., a module focusing on LGBT) that stress challenges and unique needs of special populations in small communities are built around assessable learning outcomes and objectives designed to achieve those outcomes. Twice a week, the students meet in groups of eight to ten for a two-hour session to discuss a clinical case scenario in a Topic Oriented Session (TOS). In the first-hour session, students discuss and determine the key topics and issues that they will need to research prior to the second TOS to understand the medical condition and the social context of the patient impacting the clinical presentation as well as any professional issues. Through a process dubbed by medical students as "Divide and Conquer", the students distribute the eight to ten most important objectives relevant to the case. At a subsequent session students share their findings.

Additionally, students gain clinical skills during twice weekly three hour Structured Clinical Skills sessions (SCS), where they have the opportunity to interview and perform physical examination on standardized patients. One such session include a standardized LGBT patient.

In the third year of medical education, the students enter an 8-month clerkship in the Northern communities. During this clerkship, students live and learn under the supervision of medical practitioners in one of fifteen rural communities.

Notably, Northern Ontario covers a land mass of over 800 000 Km² with a population of 732 000 people. The challenge then is to deliver curricular content to the class that is widely distributed across Northern Ontario. The experience students are exposed is not identical but comparable across communities. Student clinical experiences, performance on high stake final examinations of knowledge, clinical reasoning and objective structured clinical examination (OSCE) are similar across communities underscoring that placement in diverse communities do not disadvantage their learning.

In addition to their clinical and on-call responsibilities during this clerkship, students also learn in small groups
through the Virtual Academic Round (VAR). Two to three smaller communities that may have only two or three students are linked via technology based connections. Unlike TOS’s in first and second year, in third year students assigned to lead a VAR are responsible to provide an actual clinical case they encountered during their clinical exposure. The unfolding of the VAR is very similar to the TOS experience in the first 2 years. Learning is mostly self-directed. Participation in VAR is especially useful in that it allows students to participate to discuss and to work through a clinical problem and concerns with related peers even if they are in different locations.

Of particular importance to the current study, one module is devoted to the clinical presentations and preventive medicine relevant to LGBT patients. The module is also designed to inform students about different groups of sexual and gender minorities and, in particular, about the challenges these groups may share, as well as potential differences between each in terms of the care that they need. This particular VAR is designed to raise awareness of learners to the unique clinical challenges in caring for LGBTQ patients. The emphasis is on clinical content, including inclusive language, sensitive language in taking a sexual history, evidence-based key recommendations for clinical practice, and increased awareness of determinants of health (social, medical). Objectives for Themes 1, 2, and 3 are also included.

LGBT curriculum content in the first two years are assessed mainly through multiple choice questions and short essays, while the third year clinical content is assessed through multiple choice questions, clinical decision making vignettes and OSCE’s.

The purpose of the current study is thus to evaluate these LGBT-focused curricular activities that are currently present within the 8-month clerkship core curriculum of the NOSM undergraduate MD program.

**Methodology**

**Study Design**

Three assessment tools including Multiple Choice Questions (MQS), Clinical Decision Making (CDM) cases and Objective Structured Clinical Examination (OSCE) stations were used to assess students’ performance. More importantly, the students’ perceptions of the usefulness of the module using an online survey was assessed.

The OSCE stations included one station focused on LGBT issues, and the major objective evaluated was whether students were competent in conducting the assessment of an LGBT patient using inclusive language, and sensitive language without making assumptions about the LGBT patient. These stations are marked on both objective evaluations of 15 key items that the student must touch on to receive credit for (e.g. obtain a gynecological/sexual history), as well as a global rating, based on the student’s interaction with the patient (medical expertise or clinical knowledge, verbal and non-verbal communication skills, and professionalism).

Of note, if students fail to demonstrate these global competencies with the patient, they may pass all of the objective evaluations, but still receive a failing grade for the station. For the multiple choice questions, 4 of 60 items focused on LGBT issues. These were assessed for reliability and validity and ranged in difficulty from easy to difficult. Finally, for the Clinical Decision Making tool, there was one case focused on LGBT issues, and the objective was to assess the student’s ability to gather the necessary information from the patient in an inclusive manner, to assess their knowledge of the health risks of the LGBT patient and what kind of screening or testing might be required, and finally to assess the student’s ability to convey information on safe sex practices in a respectful manner. These three assessment tools have been measured for reliability and demonstrated effectiveness in discriminating student
knowledge and performance.

Participants

An anonymous, online survey was sent out to 64 third-year undergraduate medical students at NOSM, both Sudbury and Thunder Bay campuses. Overall 38 responses from the students were received, which accounts for 68% of the total population of students in this program. The survey invitation was sent out every 7 days, for a total of three e-mails. In this study, participants’ personal or demographic information were not gathered.

Instrument

In this study, the online Fluidsurveys was used to create the questionnaire. The survey was designed to capture information with regards to medical students’ perceived knowledge regarding the social and medical issues that individuals from the LGBT population encounter in their lives, their awareness of personal biases towards minority populations, as well as their ratings regarding the effectiveness of the VAR, a self-directed online learning module with assessable learning outcomes and objectives regarding LGBT population. The survey consisted of 21 questions, which were divided into four sections pertaining to:

Part 1: Perceived student knowledge regarding the social and medical issues that individuals belonging to the LGBT population encounter in their lives

In this section, students were asked to report their perceived awareness and understanding of social, psychological and medical issues that LGBT individuals encounter. They were also asked to answer questions about their awareness of personal biases towards visible and invisible minority groups, including individuals who are LGBT.

Part 2: Level of comfort with patients who are from LGBT and minority groups

After filling out the first part of the survey, students were asked to answer questions regarding their comfort level and attitudes when dealing with patients who are from LGBT and minority groups. This set of questions was designed based on the 5-point Likert scale from "very uncomfortable" to "very comfortable".

Part 3: Ratings on the effectiveness of the self-directed technologically-based module (i.e. the VAR) in providing students with information regarding LGBT

In this section, students were asked to rate their learning experiences in terms of usefulness of the module and the VAR in providing information about the health and medical care issues that individuals from LGBT community face. In this section, students answered the questions based on the 5-point Likert scale from "strongly disagree" to "strongly agree".
Part 4: The qualitative section

Lastly, students were asked to comment about the LGBT curriculum.

Data Analysis

The results were coded and analysed using SPSS (v.21). Basic descriptive statistics, proportion analyses, and Independent Sample T-Tests were computed. Proportions were analysed to determine whether there were significant differences between students who reported to have pre-existing knowledge regarding the social and medical issues that individuals who are LGBT encounter in lives, in comparison to those who reported not having pre-existing knowledge. Since we believed that there might be a relationship between pre-existing knowledge and students’ comfort level in dealing with patients from LGBT populations, we used Independent Sample T-Tests in order to further investigate such differences. Next, we believed that perceived pre-existing knowledge regarding the social and medical issues that LGBT individuals experience would be related to ratings of the usefulness of the VAR in two domains: in its ability to increase knowledge of the health-related issues that this community experiences; and, its ability to teach healthcare providers how to approach such patients.

Results

OSCE Station

A linear regression was performed on the student scores obtained on the OSCE station to determine the passing benchmark. An R2 of .66 was found, indicating a highly sensitive station in discriminating between students’ competencies. The average grade obtained was 81.52, with a benchmark grade of 67.81. A total of 6% failed the station, with all failures being due to global ratings (as opposed to medical knowledge).

MCQ

The 4 questions all demonstrated above acceptable point-biserial values (at or well above .20 indicating that the question reliably assessed the learning objective it purported to evaluate). A question that dealt with trans-health proved to be the most difficult question for the class with 36% of students getting the correct answer, but with a high point biserial (0.36), meaning only top performers in the class were able to answer the question correctly.

Clinical Decision Making (CDM)

The CDM proved to demonstrate good discriminability, with normally distributed scores from 1 to 13 out of a possible 13 points, and the median being at 10 out of 13. The most discerning factors in scores for the CDM were use of clinical judgment and communication in managing the case.
Reported pre-existing knowledge and biases regarding social and medical issues faced by LGBT population

Thirty six students answered the question about pre-existing knowledge regarding the social issues that individuals who are LGBT encounter; 92% of students indicated that they had pre-existing knowledge regarding the social issues that individuals who are LGBT experience (N= 36, 92% (Yes), P=. 001); however, no significant differences were found between the group of students who reported having pre-existing knowledge regarding the medical issues faced by LGBT population in comparison to those who did not make such a claim. In addition, a smaller proportion of the students responded that they over-compensate when dealing with patients belonging to minority groups in comparison to the larger proportion indicating that they did not over-compensate (N=37, 30% (Yes), P=. 02). It was also found that for our sample, more students than not reported to have awareness of their biases towards visible or invisible minority groups (N= 38, 97% (Yes), P=.01).

Effect of pre-existing knowledge on comfort level

Using Independent Sample T-Tests, we compared comfort level for students who indicated that they had pre-existing knowledge in dealing professionally with LGBT patients to those who indicated that they did not have pre-existing knowledge; however, we found no significant difference in comfort across the 2 groups. In other words, the results showed that students who reported to have pre-existing knowledge and awareness about the social and medical issues that individuals who are LGBT experience, do not significantly differ in terms of their comfort level dealing with such patients in comparison to those who did not report to have pre-existing knowledge. Therefore, in our sample study, there was no significant effect of perceived pre-existing knowledge on comfort level.

Effect of pre-existing knowledge on ratings of the VAR

We conducted Independent Sample T-Tests in order to examine the effects of students' pre-existing knowledge on their ratings of the usefulness of the VAR. The results showed a significant difference between students’ level of pre-existing knowledge regarding the medical issues that individuals who are gay experience on their ratings of the VAR. In other words, those who reported to have an awareness of the medical issues that people who are gay experience found the VAR useful in providing knowledge about the health issues of the LGBT community \(t(33) -2.94, p=.006\). Also, the mean scores indicate that both populations (i.e., those who reported and did not report to have pre-existing knowledge regarding the medical issues specific to individuals who are LGBT) rated the VAR useful; however, students who did not report to have pre-existing knowledge rated the VAR more informative than those who reported to have pre-existing knowledge \(M_{no}(1.15)> M_{yes}(.27)\).

The result of the Independent Sample T-Test showed a significant effect of students' pre-existing knowledge regarding the medical issues unique to individuals who are lesbian on their ratings of the VAR usefulness \(t(32) -3.02, P=.005\). Students' who did not report to have pre-existing knowledge regarding the medical issues that individuals who are lesbian experience benefited more from the VAR compared to those who reported to have pre-existing knowledge (i.e., \(M_{no}(1.14)> M_{yes}(.20)\)). Nevertheless, the mean scores of both populations show that regardless of pre-existing knowledge, all students found the VAR useful in providing knowledge about the health issues of LGBT community.

The results also showed a significant effect of students’ pre-existing knowledge regarding the medical issues unique to individuals who are bisexual on their ratings of the VAR usefulness \(t(33)= -3.034, p<.006\) and on its ability to
provide understanding about the challenges faced by LGBT patients dealing with health care providers [\(t(33)=3.223, p<0.004\)]. Students who did not report to have pre-existing knowledge regarding the medical issues that individuals who are bisexual experience benefited more from the VAR compared to those who reported to have pre-existing knowledge. Specifically, those without pre-existing knowledge reported found the VAR to be more useful (i.e., \(M_{\text{no}}(1.13)<M_{\text{yes}}(0.20)\), and providing greater increases in understanding \([M_{\text{yes}}(-0.10)<M_{\text{no}}(1.00)]\) than those with pre-existing knowledge. Nevertheless, the mean scores of both populations show that regardless of pre-existing knowledge, all students found the VAR useful in providing knowledge and understanding about the health issues of LGBT community.

On the other hand, the results of the Independent Sample T-Test did not show a significant difference between students who reported pre-existing knowledge regarding the medical issues faced by patients who are transgender and those who did not in terms of their ratings of the VAR usefulness.

**Thematic Analysis**

Overall, 13 participants included their comments in the survey. In order to analyze the qualitative portion of the data, thematic analysis was used. After reading the data a few times as well as coding some of the interesting and useful concepts and words that were brought up in the answers by the participants, two themes were created, which are as follows:

**Theme 1**: "the VAR was helpful and effective". Some participants found the VAR on LGBT to be helpful even though the list of resources was overwhelming. For example, a participant stated that "Overall, however, the VAR was very effective and the resources provided were excellent", or "This was an excellent and very enjoyable VAR session. It stimulated great discussion within the group".

**Theme 2**: "facilitator’s experience makes a difference in teaching the VAR about LGBT". A participant mentioned that "our facilitator has transgender patients in their practice and as such was able to provide us with valuable resources and clinical pearls"; another participant also expressed that "the instructor who is one of the very few providers in the north offering transgender transitioning services. His skill and expertise are very valuable and you should consider consulting him in the development of this VAR".

**Discussion**

The current study sought to examine students’ performance and perceived usefulness of the Northern Ontario School of Medicine’s LGBT-focused curriculum in terms of its ability to increase knowledge of the health-related issues that this community experiences, and to teach healthcare providers how to approach such patients. Based on the students’ satisfactory performance on three assessment tools (i.e., the OSCE, MCQ and CDM), it appears that this LGBT-focused curriculum is effective in increasing students’ knowledge of health issues faced by the LGBT community.

The current study also examined whether students’ pre-existing knowledge about this community affected their
comfort level in dealing with such patients. Of note, the majority of participants from this study reported having pre-existing knowledge about the LGBT community in terms of their unique medical issues, and the majority of participants reported to have awareness of their biases towards visible or invisible minority groups such as the LGBT community. With that said, there was no significant effect of perceived pre-existing knowledge on comfort level. In other words, students who reported pre-existing knowledge about the medical issues this community faces did not differ significantly from those without this pre-existing knowledge in terms of their comfort level in dealing with such patients.

However, individuals who reported to have an awareness of the medical issues that people who are gay experience found the VAR more useful in providing knowledge about the health issues of the LGBT community than did those without this pre-existing knowledge. With that said, however, the results showed that those without a pre-existing knowledge still found the curriculum to be useful; furthermore, they actually rated the curriculum as being more informative (although non-significantly more) than those with this pre-existing knowledge. This suggests that pre-existing knowledge about the unique medical challenges of the LGBT community overall may prime individuals to better appreciate and critique this type of training in the future; however, such training is still deemed important and informative by individuals at their first encounter with it. Furthermore, the results of the current study showed that while all students reported benefits from the NOSM LGBT-based curriculum, students who reported a lack of pre-existing knowledge actually reported greater benefits than those with pre-existing knowledge in three areas: in their knowledge of the issues faced by individuals identifying as lesbian, their knowledge of the issues faced by individuals identifying as gay, and in their knowledge of the issues faced by those identifying as bisexual. However, there was no effect of pre-existing knowledge on perceived benefits of the curriculum for individuals identifying as transgender, with individuals with and without pre-existing knowledge reporting equally great benefits from the experience.

Additionally, the qualitative portion of the current study suggested that students found the LGBT-based NOSM curriculum, particularly in the form of the Virtual Academic Round (VAR), to be helpful and effective. Furthermore, this data revealed that the real-life experience of the facilitator in working with LGBT patients was imperative for the effectiveness of this training. This points to the importance of future courses in LGBT-related areas being led by an instructor with actual experience and expertise in this area, who is able to make use of real-life examples and illustrations.

Overall, these results suggest that the LGBT-based curriculum implemented by NOSM is useful, beneficial and informative. Furthermore, these results suggest that the curriculum is achieving its intended goal of increasing students' knowledge and appreciation of the medical issues faced by the LGBT community.

**Take Home Messages**

**Notes On Contributors**

Karly Dudar is a Medical Student at the Northern Ontario School of Medicine. She is a recent graduate of the Master of Public Health program at Queen’s University, and her main research interests are in Emergency Medicine, Public Health, and LGBTQ2-S health.

Jennifer Gallant is an honours Psychology graduate from Cape Breton University (2015) with an MA in Applied Psychology at Laurentian University. Jennifer is currently enrolled within the Clinical Psychology PhD program at
the University of New Brunswick. Primary research interests include the role of cognitive factors (i.e. Attention) in anxiety.

Joël Dickinson is a Laurentian University professor with expertise in statistics, and cognitive processes, as well as schema and reading. In recent years, she has focused on helping to create the new Cognitive Health Research Laboratory at Laurentian University, while teaching and supervising honours and graduate students. Joël has a B.A. and a Ph.D. from the University of New Brunswick.

Dr. Marion Briggs holds a Bachelor of Science in Physiotherapy (University of Alberta), Master of Arts (Leadership Royal Roads University) and a Doctoral degree (Complexity and Leadership Research Institute at the University of Hertfordshire, England). Her career spans over 45 years in clinical and medical education settings.

Dr. Jacques Abourbih MDCM (McGill ’73), FRCS(C), practiced Urology for twenty-five years; was in charge of undergraduate medical education at NOSM until retirement in 2015. Teaching responsibilities include research methodology to postgraduate residents. Areas of research interest include medical education, continued education and professional development and professional competency development.

Ms. Golnaz Ghaderi, is a clinical associate employed at Dr. Lariviere and Associates private practice where she delivers psychological assessments and psychotherapy with adolescent and adult populations. She is also a Master’s student in Applied Psychology program at Laurentian University and she also obtained her Masters of Education in Developmental Psychology and Education from OISE (faculty of University of Toronto).

Acknowledgements

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Appendices

Declaration of Interest

The author has declared that there are no conflicts of interest.