Exploring the knowledge and attitudes of final-year medical students regarding sexual and gender minorities at a South African institution

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Sexual and gender minorities (SGMs) continue to face systemic prejudice and discrimination, including within healthcare, despite global strides towards acceptance and equality. This reality is especially problematic in the context of the South African Constitution, which provides for the protection of the SGM community and their healthcare needs. Research suggests that the healthcare needs of SGMs are either inadequately, or not, addressed, in the medical curriculum which contributes to the continuation of the marginalisation of SGM healthcare.

Objective. To explore the knowledge and attitudes of final-year medical students towards SGM healthcare education in the medical curriculum at a South African (SA) medical school in 2021.

Methods. This cross-sectional study was conducted as an anonymous online survey using Qualtrics and included 5-point Likert scale and open-ended questions. The survey underwent face (n=10 students) and content validation (n=3 clinical staff members), showing acceptable internal consistency (Cronbach's α=0.94).

Results. Most participants felt that their training on SGM-specific healthcare was insufficient and lacked an understanding of key SGM terms, which suggests a foundational knowledge gap in the SGM-specific content within the curriculum. Potential barriers to a more inclusive curriculum were identified as: a content-heavy curriculum, SGMs being a minority group with little curricular attention, lack of reform in the institutional culture and insufficient SGM representation in the learning environment. Although the low response rate (12.5%) limits the generalisability of the results, these findings offer preliminary insights for further investigation.

Conclusion. Our findings suggest a gap in the SGM curriculum, though this conclusion is limited by the low response rate. More research is needed to fully characterise this gap, but the results highlight areas for improvement during curricular review. Given the importance of equitable healthcare, we advocate for the inclusion of SGM healthcare education within the medical curriculum as a formal component to strengthen its teaching, learning and assessment.

Keywords. Healthcare education, medical curriculum, medical education, sexual and gender minorities.

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Benito Swart is a medical intern currently working at Khayelitsha District Hospital in the Western Cape. At the time of the study, he was completing his fifth year of medical studies at UP. He has a keen interest in internal medicine and SGM rights in healthcare.

Sexual and gender minorities (SGMs) have historically faced adversity in different spheres of life, including healthcare.[1] Recently, global efforts have been made to promote SGM inclusivity and equality.[2] The depathologisation of homosexuality within the scientific community, along with an evolving understanding of sexual and gender diversity has allowed for a paradigm shift.[3] The SGM term collectively refers to individuals whose sexual orientation is anything other than heterosexual, or whose sexual behaviour is not exclusively limited to interactions with the opposite binary gender, as well as individuals whose gender identity and/or gender expression do not align with their sex assigned at birth.[4,5] Terms such as LGBT (which is the acronym for lesbian, gay, bisexual and transgender) have also previously been used, though variations are present in literature. For the context of the study, we have decided to use the term SGM as it is more inclusive. The term LGBT or variations is used when citing literature for accuracy in referral.

Social determinants of health are non-medical factors that influence health outcomes and include social norms and systems that shape the reality of daily life.[6] Among these determinants are sexual orientation and gender identity,[7] with discrimination manifesting in different ways. Systemic discrimination of SGMs, including transphobia, homophobia and heterosexism, are barriers to healthcare access and lead to poor health outcomes.[8,11-14] Transgender, non-binary and gender-diverse people experience a spectrum of poor health outcomes, including a high burden of mental health problems and substance use, partly attributed to negative psychosocial risk factors.[4,11] In South Africa (SA), the publicly-funded healthcare system and its patients face a myriad of challenges.[12] These are compounded by factors such as homophobia, transphobia and discriminatory attitudes toward SGM patients,[13] which ultimately infringe on the equality of healthcare. Not only does this cause distress for these patients, but it also translates into health inequities.[7]

Recent findings in the SA context[13] suggest that fear of homophobic treatment in the healthcare system relates to delay or complete avoidance in seeking healthcare. In an international systematic review of discriminatory attitudes in healthcare, disclosure rates of sexual orientation and/or gender identity to healthcare providers ranged from 17 - 75%.[10] These were found to be influenced by fear of stigmatisation, referral to mental healthcare providers based on sexual orientation, being exposed to families[15] and possible healthcare worker attitudes towards sexual orientation and gender identity.[13] Healthcare providers have a duty to affirm sexual orientation and gender identity, not only to promote health in these individuals but to address systemic social disadvantages that translate into health disparities.[8] This duty highlights how healthcare practitioners may act as agents for social justice and health equity.[16,17]

The concept of SGM healthcare is ill-defined with little-to-no robust literature sources defining this concept accurately. In this study, SGM healthcare refers to the broad scope of healthcare and its services provided to SGMs. Although a diverse group, their needs can be conceptually unified as they face similar barriers to healthcare. Invariably, unique aspects will be found in each cohort involved but for the purposes of this article, the term SGM will be used.

SGMs and the law in the SA context

The Constitution of the Republic of South Africa, 1996 ('the Constitution') provides for rights relating to SGMs. In section 9(1) of the Constitution, it states that everyone has the right to equal protection and benefit from the law. Moreover, sections 9(3) and (4) provide that neither the state nor any person may discriminate directly or indirectly on the listed grounds, which include gender, sex and sexual orientation. This section 9 equality clause is implemented through the Promotion of Equality and Prevention of Unfair Discrimination Act 4 of 2000 (PEPUDA) and it ensures that SGMs have the right to equality and are protected from discrimination. Moreover, section 27(1)(a) of the Constitution provides that everyone has the right to access to healthcare, including reproductive healthcare. Considering both sections 9 and 27 of the Constitution, SA constitutional law protects SGMs from inequality and discrimination within the healthcare sector.

Other significant provisions of the Constitution include section 10, which guarantees that everyone has inherent dignity; section 11, which entrenches the right to life and section 12, which states that everyone has the right not to be treated in a cruel, inhuman or degrading way.

Unfortunately, formal legal protections such as human rights do not always translate to material social change. Even though SGMs are afforded human rights in SA, their lived experiences tell a different story. In a 2016 study on LGBT South Africans, 55% of the participants expressed fear of discrimination based on their sexual orientation.[14] Furthermore, approximately 44% of participants reported experiencing discrimination in their everyday lives owing to their sexual orientation in the preceding two years.[14] The study also found that 41% of participants knew someone who had been murdered because of their sexual orientation or gender identity.[14] This prevalence of hate crimes against the SGM community was highlighted by President Cyril Ramaphosa in his Human Rights Day speech in 2022, where he emphasised the need to end all 'acts of hate directed at the LGBTQI+ community'.[18] Unfortunately, healthcare continues to face such challenges, highlighting the need for medical curricula to address and mitigate biases, thereby improving attitudes towards SGMs.

The state of SGM healthcare education locally and globally

In a study conducted at the University of KwaZulu-Natal (SA), LGBT+-identifying students reported experiences of marginalisation, stigmatisation and discrimination in healthcare services.[19] In particular, healthcare providers often used their personal principles to discriminate against those identifying as LGBT+.[19] This is not only problematic because of medical ethics, but more importantly because section 9 of the Constitution prohibits unfair discrimination on the basis of gender, sex and sexual orientation. As such, healthcare practitioners can act as barriers to healthcare.[16,17] Furthermore, Müller[13] reported that attitudinal issues were not the only barrier to care for SGMs in SA, but that healthcare providers lack competence and relevant knowledge on LGBT+-specific healthcare issues. Findings from a study focused on medical curriculum mapping at the University of Cape Town, specifically reiterate the need for a structured and comprehensive approach to LGBT-specific topics in the curriculum.[1]

Globally, medical students are not exempt from experiencing heterosexism and discrimination. At the University of Ottawa in Canada, almost a third (31.1%) of 103 surveyed medical students witnessed heterosexism in their learning environment. A further 14.6% of the respondents reported that they had witnessed discrimination against LGBT individuals.[20] These results reflect the global trend of persisting implicit bias (perception and stereotypes without conscious intention) and diminishing explicit bias (which exists in the forms of discrimination and stigma) even in a country where legislation has evolved to protect and advance the rights of SGMs.[20,21] Most students (83.5 - 97.1%) felt comfortable with providing medical care to SGM patients.[20] Notably, medical students in that study reported feeling less comfortable in treating transgender issues, which correlates with findings from a study by Zelin *et al.*[5] In that study, which included 685 medical students from nine institutions in New England and at different stages of training, more students felt comfortable treating sexual minorities (92.7%) compared with gender minorities (68.4%).[5] These cohorts reported the lowest self-perceived competence in describing treatment options for transgender patients (~23.4%).[5] Nama *et al.*[20] found that 75.7% of respondents agreed that additional training around LGBT+ issues should be offered, with 84.5% of students expressing a substantial interest in further LGBT-

health-specific education overall.[20] Obedin-Maliver *et al.*[22] conducted a study involving 13 deans of medical schools across the USA and Canada who were surveyed on the number of hours spent on LGBT-health-related content within each medical curriculum. Of the 150 medical schools that responded to this survey, the median reported time designated to LGBT-health-related content was 5 hours. A third (33.3%) of medical schools reported no hours during clinical years, 6.8% reported no hours during preclinical training and 3.8% reported no hours throughout their curricula. A study by Yamazaki *et al.*[23] reported less than half of the median lecture time (130 minutes) reported by the Obedin-Maliver *et al.*[22] study, and reported that 27.5% (*n*=80) of medical schools in Japan provided lectures or workshops related to SGM content.

Various studies have found that the content on SGM-specific matters was inadequate in medical curricula.[1,5,22-24] This reported inadequacy suggests a need for curricular intervention, relating to the inclusion of SGM-specific content in the medical and all other health profession curricula.[1] An abundance of published literature has recommended that improved training and sensitisation programmes are necessary to increase the knowledge of SGMs, address negative attitudes towards this group to increase the quality of care for these individuals and improve health outcomes.[10,13,19] A crucial step of intervention lies within the medical curriculum. Therefore, our study aimed to explore the knowledge and attitudes of final-year medical students (who have completed the curriculum the furthest comparatively) regarding SGM healthcare education to provide recommendations for a bolstered curriculum design and future alterations to the medical curriculum.

Methods

This cross-sectional study used an anonymous, online Qualtrics survey to explore the knowledge and attitudes of sixth-year (final-year) medical students in a single institution in 2021. Research ethics approval was obtained from the Research Ethics Committee at the Faculty of Health Sciences, University of Pretoria (REC# 220/2021).

Survey formulation

A questionnaire was constructed based on published literature.[5,20,22] Content validation was done in consultation with external (to the research group) medical practitioners and the supervisory panel. Face validation was conducted using 10 students in the study cohort. Suggestions and changes were incorporated after discussion and internal review. The survey consisted of closed-ended questions (with a 5-point Likert scale) and open-ended questions.

Questions pertaining to SGM-related healthcare matters were based on findings from a study conducted by Obedin-Maliver *et al.*[22] and identified as representative of major SGM healthcare needs. The finalised survey comprised eight sections: (1) open-ended questions asking for definitions of SGM terms, (2) closed-ended questions regarding students' positions on SGM concerns in general, (3) their general perceptions of the medical curriculum, (4) their preparedness to counsel and treat certain SGM health concerns, (5) their professional and personal values, (6) their interest in SGM healthcare education, (7) open-ended questions on their views regarding SGM-specific content in the medical curriculum and (8) demographic characteristics. Incomplete responses were excluded from the analysis.

As terminology used for sex, gender, sexual orientation and gender identity is diverse,[25,26] we consolidated the definitions for the participants. SGMs is a relatively new term and to ensure consistency throughout, we clarified our definition by aligning ours with that of Zelin *et al.*[5] To eliminate misunderstanding, definitions were provided after section 1 of the questionnaire (where participants had to define the terms themselves).

Data analysis

Statistical analysis of the closed-ended and Likert scale questions was performed using the Statistical Package for Social Sciences (IBM, USA). Descriptive statistics, including frequency distribution of responses, were calculated. The internal consistency for Section 4 was assessed using a reliability analysis to evaluate the consistency of questions related to the participants' attitudes towards SGM-related questions. The internal consistency was deemed acceptable (Cronbach's α 0.94), indicating the reliability of the instrument.

Both inductive and deductive thematic analyses were conducted on the open-ended responses using a manual coding system and a code book generated by the primary investigators and supervisor. Deductive thematic analysis focused on open-ended questions related to definitions of SGMs, based on established descriptions in the relevant literature. Inductive analysis assessed participants' opinions. Specific concerns from participants were identified through these analyses, with quotations marked as 'P(participant number)' in the text. Trustworthiness was ensured through an iterative review process with the primary supervisor confirming themes that were generated. Additionally, an independent critical reviewer assisted with ensuring subjectivity and bias were minimised. Verbatim quotations were used to ensure accuracy.

Results

Approximately 287 participants were eligible for the study, but the response rate was low at 12.5% (*n*=36). Fifteen participants did not provide their demographic information.

Many of the participants in the sample were between 20 and 25 years (*n*=13, 61.9%), considered themselves religious (*n*=15, 71.4%) and were female (*n*=13, 61.9%). Most participants were heterosexual (*n*=12, 57.1%) and cisgender (*n*=19, 90.5%). Most participants (*n*=15, 71.4%) reported that they had friends and/or family members who identified as SGM.

Section 1: Definitions of terminology

Differentiating between sex and gender

Responses were correct if the participant's definition of sex was based on biological or bodily characteristics, and if their definition of gender was a social construct that ascribes masculinity or femininity.

Most participants had vague definitions of gender, for example, 'what you identify as' (P1), 'a role' (P2) and 'what you think you are' (P5). Sex and gender were also confused: '[s]ex is your chromosomes… [g]ender is your external genitalia' (P10). Some participants viewed gender as a choice, defining it as 'what you choose to live as' (P4), and 'an excuse to choose whether one identifies as male or female' (P5).

Most participants correctly defined sex as 'based on biological features' (P8), 'your biological makeup' (P7) and 'a biological determination' (P9). Most participants defined sex in their answer according to two sexes—male and female—and disregarded intersex.

Defining sexual orientation

Definitions of sexual orientation were considered correct or incorrect

based on the participant's ability to indicate that it is a person's attraction, in various capacities, to another person.

Most participants defined sexual orientation in terms of attraction but did not acknowledge its multidimensional nature, including physical, emotional, romantic and/or spiritual aspects. Common definitions included 'who the person is attracted to' (P1), '[t]he sex/gender one is attracted to' (P2) and 'who a person is sexually attracted to' (P6). Some participants defined sexual orientation in terms of a preference or choice, reporting that sexual orientation is 'a person's preferred sex of a[n] intimate partner' (P5) and 'the gender identity that you prefer to form sexual relations with' (P4). One participant related sexual orientation to past sexual behaviour, defining it as 'the specific pattern of sexual attraction to persons' (P3).

Defining gender identity

Compared with the previous two questions, gender identity was the least well-described. Definitions of gender identity were deemed acceptable if they reflected an understanding of gender identity as one's innate sense of being male, female or non-binary, irrespective of their sex. Vague definitions or regurgitations of the question in the form of an answer, such as '[t]he gender you identify as' (P1), were considered incorrect.

One participant defined gender identity in terms of the perceptions regarding one's role, stating that gender identity is '[h]how one feels about a role' (P2). Some participants confused gender expression and gender identity, incorrectly defining gender identity as '[t]he gender which you choose to express' (P3) and 'how a person chooses to express themselves… dressing more feminine or masculine' (P5). Some participants viewed gender identity as a choice, defining it as '[t]he gender you choose to identify as' (P4).

Section 2: Participant positions regarding sexual and gender minorities

Most participants (*n*=21, 95.5%) agreed that it is important to be knowledgeable about the sexual orientation, gender identity and sexual practices of SGM patients (Fig. 1). The majority of participants (*n*=16, 72.8%) agreed that it is important to use SGM patients' pronouns correctly. Most participants (*n*=10, 45.4%) disagreed with the view that the main healthcare needs of SGMs are related to sexual healthcare, including safe sexual practices, HIV and sexually transmitted infections. Most participants (*n*=16, 72.7%) agreed that SGM patients are more likely to suffer from health disparities in comparison to their heterosexual, socioeconomically matched peers.

Section 3: General participant perceptions of the medical curriculum

Almost half of the participants (*n*=10, 45.5%) disagreed that the medical curriculum had prepared them to treat SGM patients adequately, regardless of their gender identities (Fig. 2). A small majority of participants (*n*=11, 52.4%) agreed that the medical curriculum has prepared them to treat SGM patients adequately, regardless of the patient's sexual orientation.

Section 4: Participant positions regarding their preparedness to counsel and treat major SGM health concerns

The majority of the participants disagreed that the medical curriculum had prepared them to counsel and treat SGM patients on the following aspects: transitioning, including hormonal therapy and gender-affirming surgery (*n*=17, 77.3%); intimate partner violence and unhealthy relationships (*n*=10, 45.5%); adolescent SGM concerns (*n*=12, 54.6%); sexual healthcare beyond the boundaries of heterosexual interaction (*n*=10, 45.4%) and reproductive healthcare (*n*=11, 52.4%)(Fig. 3). The majority of the participants (*n*=12, 54.5%) agreed that the medical curriculum had prepared them to counsel and treat SGM patients on disorders of sexual development and mental healthcare (*n*=11, 50%).

Section 5: Participant perceptions regarding professional and personal values

There was unanimous agreement that all patients must be treated equally, regardless of their sex, gender and/or sexual orientation. Most of the participants (*n*=16, 76.2%) disagreed that persons who identify with SGMs are abnormal. Furthermore, most participants (*n*=18, 85.7%) strongly disagreed that it is acceptable to treat patients differently if they do not agree with a patient's personal beliefs and values. Most participants (*n*=17, 80.9%) agreed that they would still provide care to SGM patients despite any opposing personal beliefs and values. However, many of the participants (*n*=15, 71.4%) agreed that if a conflict arises between their personal values and beliefs and those of the patient, they may refuse treatment provided they could refer them to another healthcare practitioner.

Section 6: Student interest in SGM healthcare education

The majority of participants (*n*=15, 68.2%) disagreed that the SGM-specific content included in the current medical curriculum is sufficient (Fig. 4A). This corroborated the finding that most participants (*n*=16, 76.2%) agreed that they would like to be further educated on SGM healthcare (Fig. 4B).

Section 7: Participant perceptions of SGM content within the medical curriculum

Most participants reported that the curriculum could be improved by including more SGM content in this institution's medical curriculum, stating that '[t]here is not much teaching around the subject' (P10) and '[w]e only had [two] sessions in my entire undergrad[uate] program[me]' (P8), which is 'by far not enough' (P7).

Participants suggested that 'an extra optional subject' (P1), 'tutorials' (P3), 'a lecture on SGM [healthcare] and the LGBTQ community'(P4) or 'an elective module' (P6) could be integrated into the curriculum. Although most participants indicated more time needed to be spent on SGM healthcare, they also reported that the curriculum was 'extensive' (P2), 'sufficient in general' (P6) and already filled with 'massive amounts of theory' (P1), such that there is not 'much space for specific SGM [healthcare]… modules' (P6). Some participants noted that SGM healthcare is not seen as a priority within the curriculum as participants noted that they 'learn what would apply to most patients' (P8).

Participants expressed an interest in learning more about SGM healthcare, stating that '[m]ore [SGM-specific content] would have been helpful'(P8) and '[i]t is something I would have been interested in' (P11). The suggested optimal time to learn about SGM health concerns was during their pre-clinical training (first to third year). Most participants noted that SGM healthcare is not seen as a priority within the curriculum because it relates to a 'minority group'. Participants reported that the lack

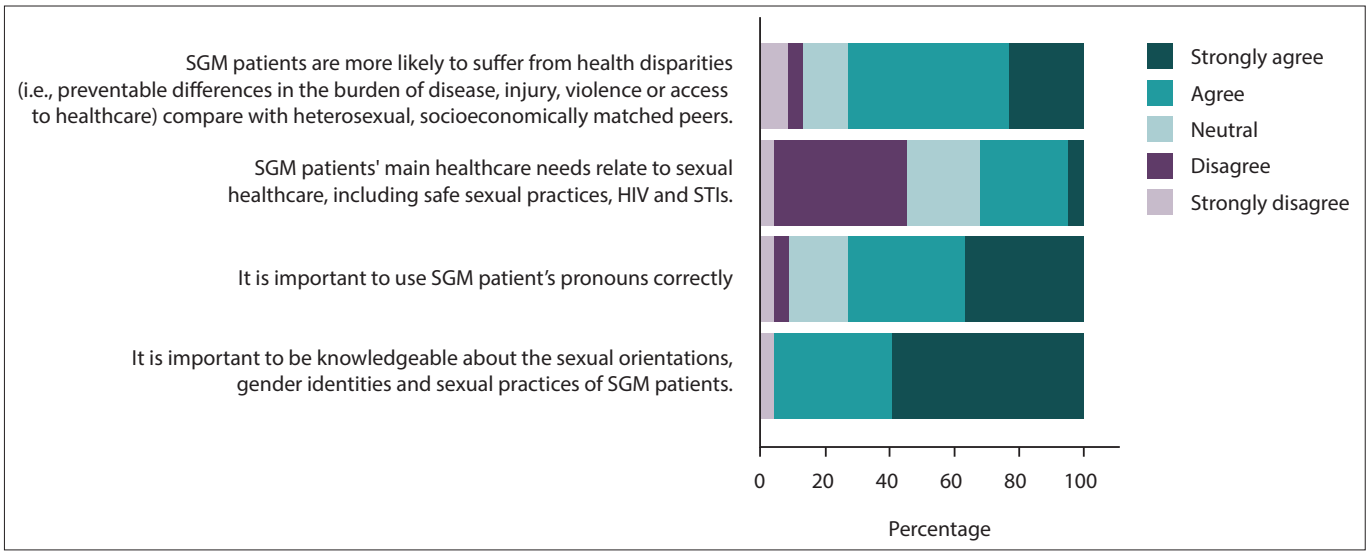

Fig. 1. Participant attitudes regarding sexual and gender minorities.
(SGM = sexual and gender minorities; STIs = sexually transmitted infections.)

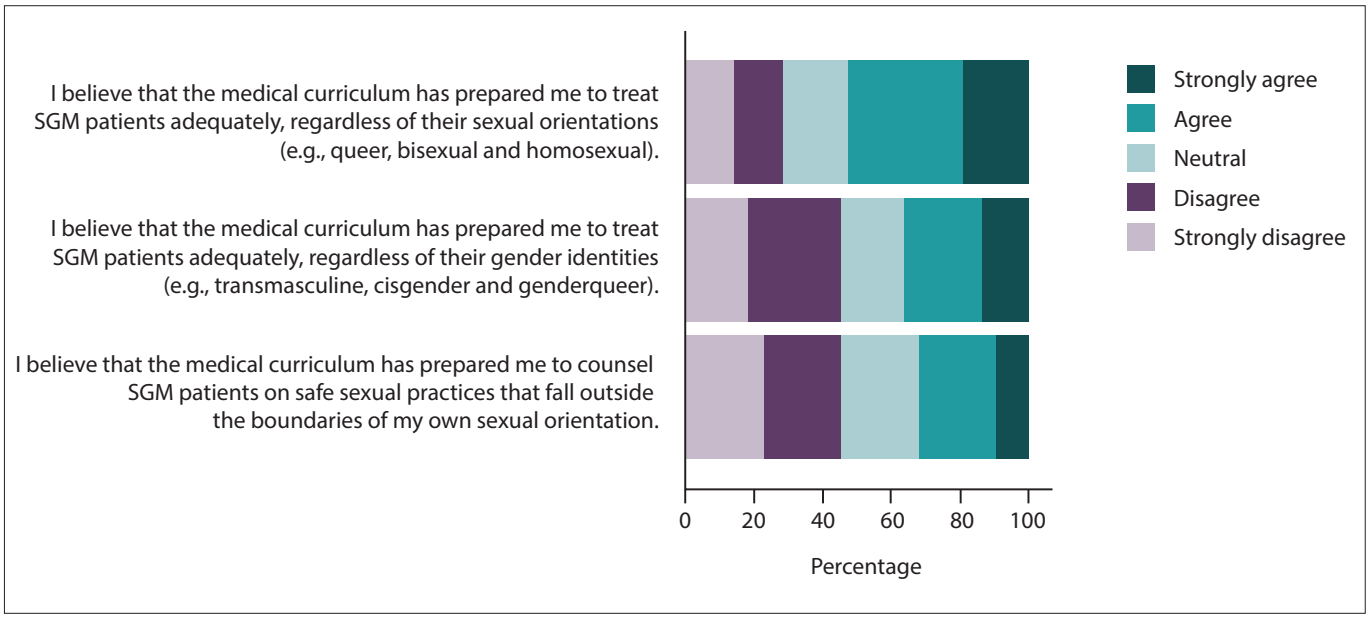

Fig. 2. General participant perceptions of the medical curriculum in relation to sexual and gender minorities.
(SGM = sexual and gender minorities.)

of SGM healthcare in the curriculum will not change 'until we see more SGM patients in state hospitals'.

Participants were concerned about the attitudes of some academic or medical staff, stating that there are 'professors and lecturers [who]… have conservative and traditional beliefs' (P3), 'archaic views of some of the doctors and lecturers' (P12) and 'blatant homophobia' (P9). The potential role-modelling of appropriate attitudes and practices will be problematic if seniors do not set an example of 'meet[ing] all patients with a non-judgmental and caring attitude' (P7).

Discussion

Medical practitioners have a duty towards their patients to provide competent care for all. For SGM patients, this means affirming and non-judgmental care.[1,27] Additionally, passively 'accepting' patients with a vague sense of duty risks undermining SGM patient care by overlooking one's clinical responsibility. In our study, the overall lack of understanding of foundational terminology suggests a knowledge gap among participants. However, participants expressed the need for further training and showed a positive outlook towards potential improvements in the medical curriculum. Most participants agreed that it is important to be knowledgeable about the sexual orientations, gender identities and sexual practices of SGM patients, which correlates with findings in the literature.[20]

Concerns were raised over the content-heaviness of the medical curriculum, leading to suggestions that SGM-specific content could be offered as an optional or elective. To emphasise the importance of

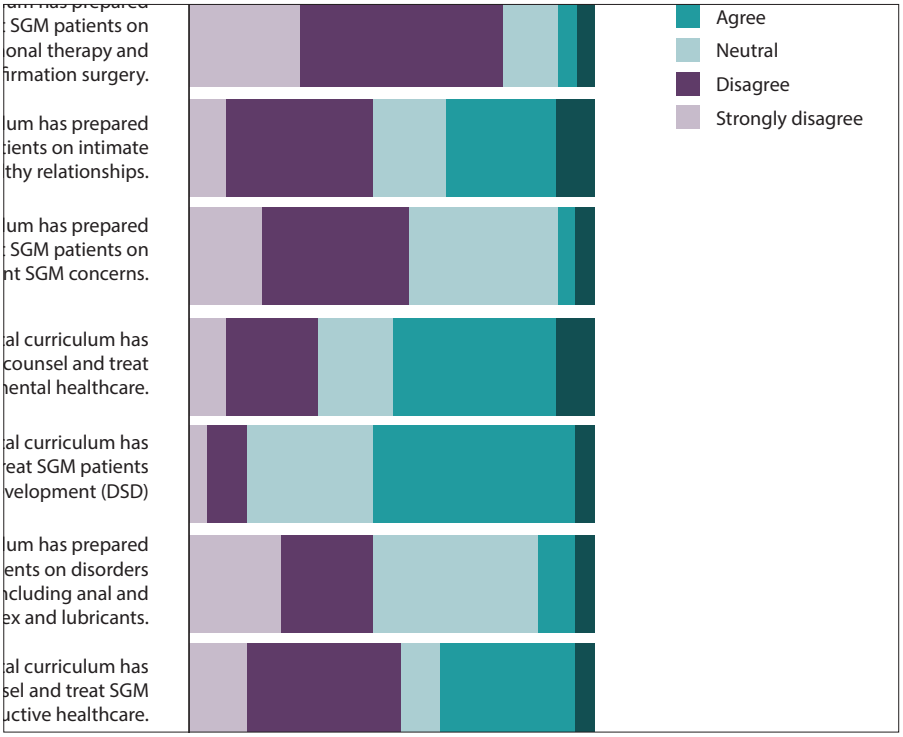

Fig. 3. Participants perceptions regarding preparedness to counsel and treat SGM patient concerns. (SGM = sexual and gender minorities.)

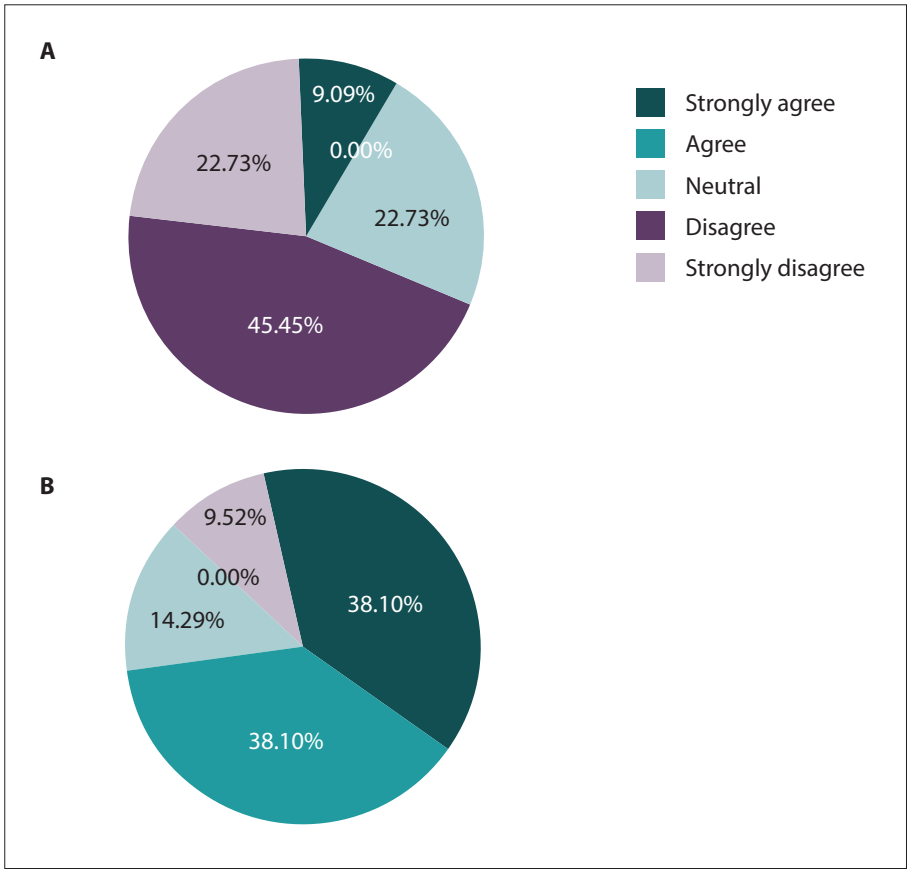

Fig. 4. A. Perceived sufficiency of current University of Pretoria medical curriculum regarding sexual and gender minority patients healthcare. B. Interest in further education on sexual and gender minorities healthcare.

this topic,[24] SGM content should be formally included in the curriculum and be examinable.[28] This presents an opportunity to explore whether the curriculum can be streamlined and aligned with Day 1 graduate attributes during future curriculum revisions. This would help integrate SGM healthcare competencies without losing important existing competencies.

Comments regarding the lack of SGM patient representation in hospitals may reflect an assumption that SGM is externally obvious. This heteronormative assumption can be harmful to patients in various ways.[8] In reality, students are likely to encounter SGM patients without recognising them as such.

Participants expressed a desire to learn about SGM health concerns during their pre-clinical training, which is in line with studies suggesting that SGM healthcare should be introduced early in the medical curriculum.[23,24] Pre-clinical training is crucial for shaping the core values essential for developing compassionate and competent healthcare practitioners.[23] Participants suggested lectures, tutorials or elective courses as ways to include the topic. However, they also identified barriers to change, including an overloaded curriculum, SGMs being a minority group and a lack of SGM representation in the learning environment. A conservative learning environment can be discouraging when trying to effect positive and inclusive change.[28] When implementing curriculum change, efforts should be made to address institutional culture if an inclusive learning environment is to be achieved. Institutional champions are vital to the success of these interventions.[28] A Japanese study noted that the unavailability of suitable instructors and the absence of policies regarding SGM content were key obstacles to incorporating such content in medical school.[23] Therefore, it is essential to recruit qualified instructors and develop appropriate policies to support these curricular changes.

Limitations

The most significant limitation of this study is the low response rate, compounded by the fact that it only included one year group from a single university. Given the topic, a selection bias may be possible, where students who were either knowledgeable or interested in the SGM community may have formed the majority. As the Protection of Personal Information Act 4 of 2013 ('POPI Act') coincided with distribution, changes were needed on top of the inability to

engage in a physical space due to COVID-19 to ensure compliance. As a study relying on self-reporting and not a demonstration of competencies, the possibility exists that the perceived preparedness of students does not correlate to their actual competency. Furthermore, the assessed SGM healthcare needs topics are neither complete nor exhaustive.

Recommendations

An opportunity exists to review the curriculum to ascertain any potential deficits in terms of SGM healthcare education, thus bolstering the training received. Symposia, online courses, workshops or short courses can provide the opportunity to bridge a curricular gap. Such interventions have been introduced in other SA universities with significant success and little disruptions to an already overburdened curriculum.[24] Pratt-Chapman and Phillips[27] report on the efficacy of a symposium to fill a similar gap at George Washington University. This intervention was designed by several professionals including clinicians with SGM healthcare experience. It was made available to all healthcare professional students, staff members and faculty members and participants' self-rated confidence in terms of the set learning outcomes improved drastically after the symposium. This study should be reproduced in more SA universities and with different types of healthcare science students as the provision of healthcare is multi-disciplinary.

Conclusion

The study findings indicate that final-year medical students perceived the assessed medical curriculum to be limited in its capacity to train prospective healthcare practitioners in SGM healthcare. However, students support the development of the curriculum to bolster their training in these competencies, thus indicating an interest, drive and/or willingness for change. We hope that the SA healthcare system takes a step towards equity of healthcare for SGM persons through greater training of medical students.

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Conflicts of interest. The authors have no conflicts of interest to declare.

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