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Queering PA School: An Audit of Augsburg University's Physician Assistant Program Regarding LGBTQ+ Related Health Topics

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Abstract

Background: Historically LGBTQ+ people have encountered discrimination in the world of medicine, and often providers are sometimes unaware of how to manage medical issues of these patients. In order to best serve queer and trans patients, a more coherent, consistent curriculum needs to be established so that all medical professions are capable of giving high quality treatment to these patients. Physician assistants (PAs) are advanced practice providers who take care of LGBTQ+ patients on a daily basis and are trained under a similar model as physicians. PA programs must also be up to date on the most culturally sensitive ways to care for the queer community to help increase access to these patients.

Purpose: All PA programs differ in the level of teachings about queer healthcare as there are no nationally established standards for this professional school. It is important to begin the conversation about standardizations so that all PA schools are equipping their students to be able to treat people in the LGBTQ+ community. This study hopes to create a conversation about queer healthcare through the lens of PAs and challenge other medical professional programs to query their own curriculum on the matter.

Methods: This study performed an audit of the Augsburg University PA program's LGBTQ+ related content compared to national competencies[4] created for medical schools. Each competency was analyzed and ranked as "met," "partially met," or "not met." The results were then compiled onto a document for the PA program to utilize and improve their current curriculum.

Results: It was discovered that the Augsburg PA program learning objectives fully fulfilled 12 competencies, partially fulfilled 14 competencies, and did not fulfil 4 competencies. Many of the competencies that were partially met or not met were related to the field of pediatric queer medicine, differences in sex development (DSD), or queer policy change in healthcare. The literature revealed there is little known about the current teachings of queer health in PA schools. Additionally, the nationally recognized organizations for PA schools have very broad recommendations for gender and sexual minority (GSM) content, leaving the possibility of programs to include as much or as little as they choose in their curriculum.

Conclusion: A call for more specific and measurable competencies for PA schools to follow for LGBTQ+ health topics is being made so that each school has a way to audit themselves. Actions that fellow PA educators can take include performing an audit of their curriculum, developing updated competencies specific to PA school, or discussing the intricacies of their curriculum with LGBTQ+ students and staff. This could help ensure that more PAs in this generation will have the confidence and competence to handle the needs of queer and trans patients.

Definitions: Throughout this paper, the terms "LGBTQ+," "queer," and "GSM" will be used interchangeably to refer to the entire population of lesbian, gay, bisexual, pansexual, transgender, genderqueer, gender non-conforming, two-spirit, intersex, questioning, and asexual population.

Key Words: Curriculum development · LGBTQ · Transgender health · Health equity · Medical education · Physician assistant · Physician assistant school

Introduction

Within the healthcare field, the topic of LGBTQ+ health is still quite new and upcoming. Some providers are fluent and familiar with the complexities of LGBTQ+ health while others may be unfamiliar with the most basics of queer health. Many gender and sexual minority (GSM) patients often feel that their healthcare providers are not trained well-enough to take care of their complex healthcare needs.[1] GSM individuals often face disparities in the care they receive when it comes to mental health disorders, eating disorders, pregnancy, obesity, cancer, and substance abuse.[2] These feelings of hesitancy that queer patients face could be attributed to the degree of education that medical providers are being taught on these topics.

Medical education is often taught through a heteronormative, binary lens that often pushes voices and bodies of LGBTQ+ individuals to the side.[3] Assumptions of heteronormativity are taught which may lead to inappropriate history-taking on the provider side or the potential to misgender a patient. Additionally, medical intake forms are often devoid of any options for transgender or gender non-conforming patients to identify themselves. In a recent study in 2017 it was found that 13 states in the United States lacked any LGBTQ+ specific clinics in their area.[2] Not only are GSM patients facing a lack of shortage of competent providers, but when they do reach out for care, they may be met with discrimination, stereotypes, assumptions, or bias. All of these microaggressions slowly build up and may prevent people in the LGBTQ+ community from reaching out for care when needed. This perpetuates the cycle of need by increasing the rates of the above-mentioned needs such as mental health disorders, cancer, and others, just because of a provider's inability or unwillingness to treat GSM patients.

This leads researchers to ponder what is being taught to healthcare providers in the classroom setting regarding LGBTQ+ health. Much research exists regarding the curriculum and teachings of medical students, however, not much is known about the experiences of physician

assistant (PA) students. One guiding body of competencies for LGBTQ+ health was created in 2014 by the Association of American Medical Colleges (AAMC) geared toward medical schools.[4] Since PAs are trained similarly to a physician, the AAMC guidelines would be an appropriate way to gauge the current state of a PA schools' literacy in queer health. This study may be the first of its kind to make an audit of a PA school curriculum compared to AAMC guidelines. By auditing the PA school curriculum at Augsburg University, a tailored approach can help better address the needs of LGBTQ+ patients within the curriculum. Other PA programs may also follow suit and perform audits of their programs in order to produce competent, culturally sensitive future PAs. By creating more safe providers for GSM patients to confide in, the gaps in healthcare for these patients will ideally be minimized.

Literature Review

Many studies depict the ongoing discrimination, stereotypes, and microaggressions that many LGBTQ+ patients still face in healthcare today.[5-8] Some recent studies about the transgender community have shown negative associations between provider knowledge and transphobia and some providers even refusing to provide basic care to trans patients like pap smears.[9-10] Discrimination and bias in the healthcare field still exists today, so ongoing analysis of how future healthcare professionals are being taught is crucial for GSM patients.

There has been a growing body of research dedicated to analysis and intervention of medical schools' LGBTQ+ health curriculum. Many studies have aimed to try an intervention with a group of medical students to see how their perceptions or understandings of queer healthcare change or improve. Currently, there are few studies aimed directly at the knowledge of PAs or physician assistant students' (PAS) understandings of queer healthcare. Although much of the current research involves medical schools, these research concepts can also be

applied to PA schools as they are trained under a similar medical school framework. This literature review will discuss specific PA school applications as possible, as this study hopes to address specific needs of a PA school's curriculum. A few patterns were observed in regard to the available literature, including student surveys regarding knowledge of GSM health concerns, the use of short-term educational courses on LGBTQ+ health topics, long-term or other interventional methods to incorporate more queer health topics in medical schools, and self-audits of medical school GSM-related content.

After learning about the overview of medical school knowledge on queer health, it was then important to analyze how healthcare students themselves interpreted their own program's inclusivity. A number of surveys were conducted with medical students to gauge their level of comfortability with LGBTQ+ patients. One convenience sample compared the knowledge base and attitudes towards queer patients of medical students, dental students, and nursing students at the same university.[11] Between all three types of healthcare students, LGBTQ+ respondents reported the poorest perception of their formal training compared to their heterosexual counterparts. Moving forward this could be important to recognize and bring alongside LGBTQ+ students in healthcare programs to provide their input into the curriculum. A similar style survey assessed GSM-related knowledge levels of medical students, PA students and nutritionist students' at the University of Texas Southwestern Medical Center.[12] It was found that medical students had the greatest confidence in obtaining a sexual history compared to the PA students. PA students did, however, report increased confidence in caring for transgender patients as they progressed in their education. This could be due to students having more hands-on experience with LGBTQ+ patients during their clinical year of school.

A study of 296 medical students in the UK revealed that many medical students were exposed to basic LGBTQ+ awareness and basic practices of transgender healthcare.[13] This author recommended that governing bodies of the medical field, such as the American Academy of PAs (AAPA) or the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA) should set guidelines as to what type of LGBTQ+ teaching should be mandated in curricula. The only survey found regarding a PA program's inclusion of LGBTQ+ topics was published in 2014 by Seabourne.[14] This convenience survey was dominated by program directors' responses rather than students, so it is not entirely encompassing of the student perspective. Another limitation of the study includes that it focused on the general term of "sexual health" instead of specifically talking about LGBTQ+ health. Thirty-eight percent of respondents said LGBTQ+ topics were rarely discussed in their programs and some even said their program's religious affiliations may have played a role in how much queer health was discussed.[14] Of the topics that were discussed, respondents reported the areas of transitioning and sexual reassignment surgeries to be covered the least.[14] This could be a point of reference for future PA school guidelines to focus on.

To address the identified gaps in queer healthcare knowledge, many medical school programs have created single session or short term lectures for their students to learn high-yield information about LGBTQ+ health. Although ideal for many medical schools because of its short duration, these sessions are often optional for students and do not guarantee any recall of the material throughout the pre-clinical phase. A few studies initially started with a needs-based assessment prior to forming a didactic course in order to best tailor the content of the lecture to their program's needs.[15-16] Another study utilized the 2014 guidelines set by the AAMC regarding LGBTQ+ health to develop their course.[17] One study provided an optional didactic

course available to both medical students and PA students within the same university.[18] Out of all these studies, many of the students scored higher on knowledge levels about the GSM topics on post-survey assessments compared to their pre-survey knowledge.[15-18]

A different style of a short term course was produced in conjunction with a university's campus LGBTQ+ student association. This was a ten hour elective day that incorporated lectures, breakout sessions, poster presentations, and a community networking opportunity for medical students to attend and learn about a variety of GSM topics.[19] The development of this forum with the help of a student society on campus aligns directly with Keuroghlian et al's suggestions of utilizing queer community members and already established queer organizations instead of starting a curriculum from scratch.[20] These students also reported higher levels of increased comfort in interacting with queer patients after attending the forum course.[19] Of note, the participants in this course were mostly comprised of heterosexual females or people identifying within the LGBTQ+ spectrum. This highlights the disadvantages of making these courses optional or elective. By making courses elective, there may be subsets of students that never hear about LGBTQ+ health before going out into their clinical rotations.

One last style of short-term lectures utilized simulated patient scenarios with real LGBTQ+ people to learn more about bedside manners and speaking with inclusive language. In one study, students were shown two different video scenarios of a GSM individual speaking with a provider.[21] One video showed a provider who did not use inclusive language and was insensitive towards the patient. The other video depicted the same provider and patient; however, the provider had a much more culturally sensitive approach and style in their taking of a history. Students responded positively to this type of case-based learning and reported feeling more confident in how to ask sensitive questions to a GSM individual.[21] In contrast, Underman et al.[22]

invited and trained a few transgender individuals in the community to be simulated patients for a class of medical students. Based on a post-session evaluation, the students reacted positively toward having real, hands-on experience with transgender patients.[22] This type of simulated GSM patient scenario should be considered when creating PA school curriculum, as it could increase student skill levels and bedside manners prior to starting clinicals.

Another subset of studies aimed to create a long-term LGBTQ+ curriculum within medical schools. One unique study utilized LGBTQ+ "topic stewards" to incorporate more discussions and lectures throughout three years of medical students' pre-clinical lectures.[23] These topic stewards were faculty members who specialized in in LGBTQ+ health and were subsequently paid 10% non-clinical salary via the University of California San Francisco School of Medicine (UCSFSOM). Not only did the incorporation of these stewards increase the amount of exposure of GSM topics from 4 hours to 20 hours, but it also spread out exposure throughout many years instead of one singular lecture. The topic stewards also incorporated queer health topics into pre-existing lectures which could be a useful tactic for other programs to mimic.[23] The drawback to the topic steward method is that schools might need to financially compensate the steward for their time. Similarly, a project called eQuality at the University of Louisville School of Medicine was created to incorporate more GSM-related topics throughout the first and second years of a medical student's education.[24] This resource outlines different ways that other institutions could improve their GSM-related content in their curriculum as well. Specifically, this program utilized queer community members to help create content, speak at lectures, and oversee progress of the project as it was being piloted. Keuroghlian et al[20] also encourages the use of the involvement of the LGBTQ+ community in the creation and involvement of curricula for healthcare students. This study similarly had a goal of creating long term curricula at Harvard

medical school about GSM topics instead of one single session lecture. This group decided to utilize the AAMC thirty competencies from 2014[4] to audit their current curriculum and add additional content to their existing curriculum based on the results. The Harvard group also created numerous online modules for students to learn about basic LGBTQ+ terms, concepts, and health inequities these patients face.[20]

One final resource outlines twelve main ways that medical schools can incorporate more GSM content into their programs long-term.[25] A few important things they highlight include creating a common language surrounding GSM, incorporating intersectionality, involving but not overburdening students, and empowering allies within the program's faculty and staff.[25] This guide can help make long-term changes in a curriculum that are sustainable and effective.

In order to best analyze Augsburg PA program's state of discussing queer health, a governing body or set of guidelines need to be established. The governing body of PA curricular content, The Accreditation Review Commission on Education for the Physician Assistant (ARC-PA), does not have formal guidelines for requirements regarding LGBTQ+ health in curricula. The latest standards by ARC-PA published in 2020 requires all programs to commit to diversity and inclusion within their program and prepare students to provide medical care for all sexualities.[26] The guidelines are very broad and lack any proper definition of what it means to be "diverse" or "inclusive," especially when considering GSM health content. Additionally, standard A1.11 from the 2020 ARC-PA accreditation standards states that the application of diversity and inclusion ultimately lies in the hands of the university/institution, not within the hands of the actual PA program or curriculum. This leaves room for interpretation of whether a PA program actually needs to include any GSM content in their curriculum to begin with.

The National Commission on Certification of Physician Assistants (NCCPA) is an organization that provides certification and recertification for PAs. On an annual basis they produce a "blueprint" that lays out the important topics to study in each anatomical system before taking the national board certification exam. According to the 2025 blueprint, knowledge of "human sexuality and gender dysphoria" are recommended in addition to understanding gender transition and other associated medical issues regarding gender and sexuality.[27] Again, these statements are broad and imprecise as to what PAs should be expected to know before going out into the field. This places physician assistant programs in a position to purposefully withhold certain information about queer health if they choose as there are no governing guidelines to require them. For example, some programs could choose to discuss all the different types of gender-reassignment surgeries and their risks and benefits, whereas others may only choose to cover the basics of what gender transitioning means. Similarly, one program may choose to cover the in-depth complexities of a GSM couple family planning whereas others may choose to not discuss anything at all. These inconsistencies between PA programs will only then lead to inconsistencies in the future PAs that are being produced and sent off into the workforce. Researchers must come together to analyze these inconsistencies so that medicine can better itself instead of LGBTQ+ patients having to better it for themselves.

In 2014 the Association of American Medical Colleges (AAMC) published a guide for medical school curriculum to follow regarding LBGTQ+ health.[4] The resource specifically outlines thirty main competencies that schools should aim to achieve in order to produce future providers who are well-versed in the patient care of the LGBTQ+ population (Appendix A). A few recent objective studies utilized these thirty competencies to perform self-audits of their designated medical schools' curriculum.[28-29] They were then able to take the results of their

audits to further define what areas of improvement needed to be made at their institutions. In contrast, the Uniformed Services University School of Medicine created a subjective survey of their faculty and staff's perceptions of the program based on the AAMC's guidelines.[30] This also helped researchers identify areas of improvement in their curricular content regarding queer health.

A few limitations to using the AAMC competencies to audit a healthcare program include that they are now 10 years old, and they are geared toward medical schools. After an analysis of the literature, there have been no new updates made to the competencies nor any new organizations coming out with similar guidelines. Although these competencies can easily be applied to PA schools, there is still a lack of formal guidelines such as the AAMC's for PA programs.

Overall, there is a large gap in the literature regarding queer health competencies and PA schools. Little is known about what PA schools are teaching in terms of LGBTQ+ health, which creates inconsistencies between programs and individual student learning. There also exists a lack of GSM health guidelines for PA schools to follow when creating a curriculum. The literature highly suggests utilizing a long-term approach to GSM topics in curriculum, so an audit of the curriculum would be an ideal place to start by finding gaps related to published guidelines and competencies. Additionally, the research suggests a student based survey may also be beneficial to gauge the breadth and depth of content they are learning about GSM-related topics.

To date, there have been no studies utilizing the 2014 AAMC guidelines to audit a physician assistant program. This knowledge could be useful to judge if the guidelines can be applicable to PA programs, and to begin the conversation about queer health competencies in

other medical professions aside from physicians. This research will aim to fulfill a set of goals as the literature has guided. First, an audit of the entire curriculum will be performed based on the 2014 AAMC guidelines to assess gaps in the program's LGBTQ+ curriculum. Subsequent recommendations will then be made based on the results to implement new ideas or content throughout the Augsburg PA curriculum.

Methods

An audit was conducted of the pre-clinical phase lecture learning objectives at the Augsburg University PA program, as these are standardized compared to content that is learned during the clinical phase. This audit is comprised of a comparison of currently followed objectives regarding LGBTQ+ subjects to thirty nationally published competencies produced by the AAMC that were discussed prior.[4]

First, all learning objectives from the didactic portion of the program were compiled onto one spreadsheet. Then, keywords were searched in the objectives to find pertinent objectives to the research. The following terms were used: "sex," "gender," "queer," "transgender," "LGBT," "bisexual," "lesbian," "gay," "MSM," "WSM," "MFT," "FTM," "homosexual," "intersex," "trans," "transgender," "DSD," "disorders of sexual dysfunction," "sexual orientation," "gender minority," "gender dysphoria," "abuse," "violence," "suicide," "expression," "identity," "discordance," "nonconform," "orientation," "female," "male," "atypical," "gender neutral," "rapport," "disparities," "homophobia," "transphobia," "heterosexism," and more. The pertinent objectives were compiled onto a spreadsheet to then be compared to the AAMC competencies (Appendix A).

To make comparisons between the PA program's objectives and the AAMC competencies, a scale of "met," "partially met," and "not met" were utilized. If the learning

objectives covered every detail of the AAMC competency, that competency was deemed as "met." If the learning objectives touched on some aspects of the AAMC competency but did not fully discuss everything in the competency, that competency was deemed as "partially met." Of note, within the Augsburg learning objectives, one objective states "review the Minnesota LGBTQ Standards of Inclusion and give examples how these may be implemented in clinical setting."[31] These standards of inclusion are listed on the objectives for the students to read, however, this could be something that the student bypasses either purposefully or accidentally. Therefore, if something within the Minnesota LGBTQ+ Standards of Inclusion met the AAMC competency completely, it is deemed as a "partially met" competency since the document might be overlooked by the student. Lastly, if the Augsburg learning objectives fail to match an AAMC competency at all, it is deemed "not met." This type of audit is modeled after the Devita et al study from 2018.[28]

Results

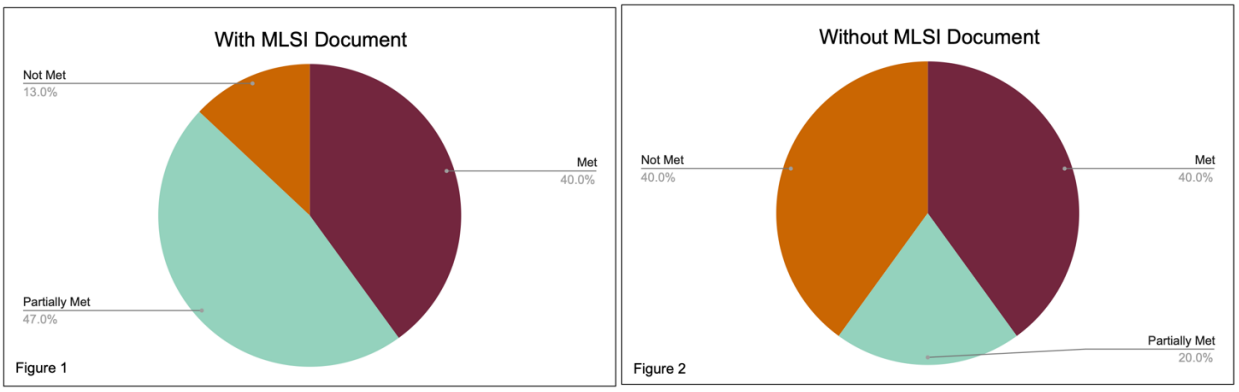
Of the thirty AAMC competencies[4], the Augsburg University PA program's learning objectives entirely met twelve competencies (40%), partially met fourteen competencies (47%), and did not meet four competencies (13%). Of the four competencies that were not met, two of them fell underneath the subcategory of competencies called "Knowledge for Practice" which is defined by the AAMC as "established and emerging biophysical scientific principles fundamental to health care" for queer patients. [4] The other two competencies that were not met fall underneath the subcategories of "Practice-Based Learning and Improvement" and "Systems

Table 1: Audit Results of AAMC Competencies.

Based Practice." The majority of the partially met competencies fall under the subcategories of "Interpersonal and Communication Skills," "Professionalism," and "Systems Based Practice." The majority of the competencies that were deemed entirely met fell within the subcategory of "Patient Care." These results reflect the subcategories in which the Augsburg PA program is lacking in their curriculum or excelling.

A few patterns of subject matter were also noted amongst the competencies that were deemed "not met." Three out of four of the "not met" competencies involved the subject of LGBTQ+ healthcare across the lifespan or during childhood/adolescence. Of the "partially met" competencies, the following topics were lacking from Augsburg's learning objectives: implicit bias towards queer and trans individuals; LGBTQ+ supportive policy reform within healthcare; differences of sex development (DSD), and legal issues in healthcare concerning LGBTQ+ patients. A few topic areas in which the Augsburg PA curriculum "met" competencies include the following: sensitively obtaining a history and physical exam from queer patients, developing a relationship built on respect with your LGBTQ+ patients, and providing appropriate referrals and support to patients when needed.

Of note, without the mentioning of the Minnesota LGBTQ+ Standards of Inclusion[31] document in the Augsburg learning objectives, eight of the "partially met" competencies would be considered "not met." This would render the results as 40% met competencies, 20% partially met, and 40% not met.



Figures 1 and 2: AAMC competencies audit results with (Figure 1) or without (Figure 2) the presence of the Minnesota LGBTQ+ Standards of Inclusion (MLSI) document taken into consideration. Figure 1 demonstrates the results if the Augsburg learning objectives audited with the MLSI. Figure 2 demonstrates the Augsburg learning objectives audited without the MLSI.

Discussion

Overall, this audit found that the learning objectives from the Augsburg PA program met or partially met 87% of the competencies from the AAMC 2014 guidelines. The remaining 13% of competencies were not met by the objectives. Many of the themes among the "not met" or "partially met" competencies were related to LGBTQ+ youth healthcare, DSD patients, and policy within healthcare regarding queer people.

The addition of the Minnesota LGBTQ+ Standards of Inclusion document within the Augsburg PA objectives was proven to significantly impact the breadth of knowledge students could potentially learn regarding LGBTQ+ health. The drawback to this document is whether or not the student will actually take the time to read it or not. It is unknown whether these standards of inclusion were heavily discussed during the actual lectures instead of just mentioned within the learning objectives. As this document covers many aspects of queer health specific to the Minnesota area, it may be beneficial for the faculty at Augsburg's PA program to utilize this within the lectures, or create a quiz based off the material to ensure the students are reading the document. Additionally, as this document is only a few years old, PA schools in the Minnesota

area may choose to perform an audit based on these standards instead of the competencies from the AAMC.

Compared to the 2018 Devita study that utilized the same AAMC competencies to audit Georgetown University's School of Medicine, Augsburg's PA program ranked higher in terms of competencies that were met and partially met. Although a comparison between the two studies could be drawn because of the common use of the AAMC competencies to audit, it is not fair to compare the two because of the slight differences between their auditing methods and materials audited. Instead, this study will be used as the first of its kind to use these AAMC competencies to audit a physician assistant program. Future comparisons between the audits of PA programs and medical schools may be used to determine the depth of knowledge these providers may one day contain in their practice. As stated earlier, there is a call for more updated competencies as the AAMC's are outdated and generally geared towards medical schools. There is a need for PA school specific competencies that can be followed to determine if future PAs are receiving the information they need to properly care for patients in the LGBTQ+ community.

This study did yield an unexpected result of a large number of competencies being met from the learning objectives. It was unknown what results to expect, however, researchers were anticipating many of the competencies to be majority not met. Alternatively, if one considers the substantial impact of the Minnesota LGBTQ+ Standards of Inclusion document within the learning objectives, one may conclude that the competencies were majority not met or partially met. Another unexpected result involves the content matter of the competencies that were partially met or not met. As an audit of this curriculum has never been performed in the past, audit results were unprecedented and unpredictable.

Based on the existing literature, it is crucial that all healthcare professional schools begin to audit their curriculum regarding LGBTQ+ health content. Additionally, there needs to be more guidance from national PA organizations such as ARC-PA or NCCPA as to what specific topics of LGBTQ+ health should be addressed in PA schools across the country. Having a standardized guiding document will unify the PA programs across the country to ensure all LGBTQ+ patients in America will receive top-quality healthcare.

The literature also supports the use of surveys that determine the knowledge level of healthcare students on GSM-related topics. The use of a survey such as this in a PA school setting would be beneficial for faculty to identify areas of improvement as well. These surveys could be built off of the AAMC competencies, but ideally a new set of competencies for PAs should be made. A call out to the governing bodies of PA schools such as the ARC-PA or NCCPA should be made to address these needs. Specifically, the use of pre and post surveys may be helpful when implementing changes to a curriculum to see if they made an impact on students' knowledge level. The combination of performing an audit followed by pre and post surveys of students before and after implementing new content could be useful in the long-term analysis of curriculum.

Limitations of this research include that the audit was performed by one student who is currently enrolled in the Augsburg University PA program. Due to time constraints, an audit was only conducted on the lecture objectives and no audit was performed on the actual lecture content such as slideshows presentations, audio recordings, or video lectures. Additionally, this audit does not consider any verbal information that is presented to students regarding LGBTQ+ health. Therefore, some competencies may or may not be met depending on what was spoken or not spoken of by the actual professors. Although the professors at Augsburg University are

required to discuss the lecture objectives within the lecture content, it is at the discretion of that professor to include as little or as much about the topic as they would like. An additional audit of lecture objectives, lecture content, and verbal information given by professors would be beneficial in the future. Finally, it should be noted that the 2014 AAMC guidelines that were used to audit the Augsburg PA curriculum are now ten years old. Unfortunately, there are currently no updated alternatives to use as an audit guideline for PA schools. Despite the fact that these competencies are aging, they still remain relevant as they include important aspects of LGBTQ+ healthcare including historical background, history taking, rapport, respect, physical examination, bias recognition, and others. More research is needed with regards to PA school teachings of GSM populations so that appropriate competencies can be created for these schools to audit themselves.

Conclusions

Queer people today still face uncountable numbers of disparities when accessing healthcare, all of which could be minimized if proper steps are taken to educate our future healthcare providers. With the increasing need for providers who are comfortable and competent with LGBTQ+ patients, the need for thorough teachings on the subjects also increase. A growing body of research has been dedicated to improving GSM related curriculum in medical schools, however, little is still known about the teachings and knowledge base of PA students. Although more research is needed to bolster auditing methods, this study can act as a framework for other PA programs to review their own curriculum to ensure they are producing culturally competent physician assistants. By continually auditing medically focused curriculum, inadequacies will be identified so that programs can make improvements and thus, improve the future care of all LGBTQ+ patients.

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Appendices

Appendix A: Association of American Medical Colleges (AAMC) 2014 Thirty Competencies from *"Implementing Curricular and Institutional Climate Changes to Improve Health Care for Individuals Who are LGBT, Gender Nonconforming, or Born with DSD: A Resource for Medical Educators"*

Patient Care

1) Sensitively and effectively eliciting relevant information about sex anatomy, sex development, sexual behavior, sexual history, sexual orientation, sexual identity, and gender identity from all patients in a developmentally appropriate manner.

2) Performing a complete and accurate physical exam with sensitivity to issues specific to the individuals described above at stages across the lifespan. This includes knowing when particulars of the exam are essential and when they may be unnecessarily traumatizing (as may be the case, for example, with repeated genital exams by multiple providers).
3) Describing the special health care needs and available options for quality care for transgender patients and for patients born with DSD (e.g., specialist counseling, pubertal suppression, elective and nonelective hormone therapies, elective and nonelective surgeries, etc.).
4) Assessing unique needs and tailoring the physical exam and counseling and treatment recommendations to any of the individuals described above, taking into account any special needs, impairments, or disabilities.
5) Recognizing the unique health risks and challenges often encountered by the individuals described above, as well as their resources, and tailoring health messages and counseling efforts to boost resilience and reduce high-risk behaviors.
6) Providing effective primary care and anticipatory guidance by utilizing screening tests, preventive interventions, and health care maintenance for the populations described above (e.g., screening all individuals for inter-partner violence and abuse; assessing suicide risk in all youth who are gender nonconforming and/or identify as gay, lesbian, bisexual and/or transgender; and conducting screenings for transgender patients as appropriate to each patient's anatomical, physiological, and behavioral histories).

Knowledge for Practice

7) Defining and describing the differences among: sex and gender; gender expression and gender identity; gender discordance, gender nonconformity, and gender dysphoria; and sexual orientation, sexual identity, and sexual behavior.
8) Understanding typical (male and female) sex development and knowing the main etiologies of atypical sex development.
9) Understanding and explaining how stages of physical and identity development across the lifespan affect the above-described populations and how health care needs and clinical practice are affected by these processes.
10) Understanding and describing historical, political, institutional, and sociocultural factors that may underlie health care disparities experienced by the populations described above.
11) Recognizing the gaps in scientific knowledge (e.g., efficacy of various interventions for DSD in childhood; efficacy of various interventions for gender dysphoria in childhood) and identifying various harmful practices (e.g. historical practice of using "reparative" therapy to attempt to change sexual orientation;

withholding hormone therapy from transgender individuals) that perpetuate the health disparities for patients in the populations described above.

Practice-Based Learning and Improvement

12) Critically recognizing, assessing, and developing strategies to mitigate the inherent power imbalance between physician and patient or between physician and parent/guardian, and recognizing how this imbalance may negatively affect the clinical encounter and health care outcomes for the individuals described above.
13) Demonstrating the ability to elicit feedback from the individuals described above about their experience in health care systems and with practitioners, and identifying opportunities to incorporate this feedback as a means to improve care (e.g., modification of intake forms, providing access to single-stall, gender-neutral bathrooms, etc.).
14) Identifying important clinical questions as they emerge in the context of caring for the individuals described above, and using technology to find evidence from scientific studies in the literature and/or existing clinical guidelines to inform clinical decision making and improve health outcomes.

Interpersonal and Communication Skills

15) Developing rapport with all individuals (patient, families, and/or members of the health care team) regardless of others' gender identities, gender expressions, body types, sexual identities, or sexual orientations, to promote respectful and affirming interpersonal exchanges, including by staying current with evolving terminology.
16) Recognizing and respecting the sensitivity of certain clinical information pertaining to the care of the patient populations described above, and involving the patient (or the guardian of a pediatric patient) in the decision of when and how to communicate such information to others.
17) Understanding that implicit (i.e., automatic or unconscious) bias and assumptions about sexuality, gender, and sex anatomy may adversely affect verbal, nonverbal, and/or written communication strategies involved in patient care, and engaging in effective corrective self reflection processes to mitigate those effects.
18) Identifying communication patterns in the health care setting that may adversely affect care of the described populations, and learning to effectively address those situations in order to protect patients from the harmful effects of implicit bias or acts of discrimination.

Professionalism

19) Recognizing and sensitively addressing all patients' and families' healing traditions and beliefs, including health-related beliefs, and understanding how these might shape reactions to diverse forms of sexuality, sexual behavior, sexual orientation, gender identity, gender expression, and sex development.

20) Recognizing the unique aspects of confidentiality regarding gender, sex, and sexuality issues, especially for the patients described above, across the developmental spectrum, and by employing appropriate consent and assent practices.
21) Accepting shared responsibility for eliminating disparities, overt bias (e.g., discrimination), and developing policies and procedures that respect all patients' rights to self-determination.
22) Understanding and addressing the special challenges faced by health professionals who identify with one or more of the populations described above in order to advance a health care environment that promotes the use of policies that eliminate disparities (e.g., employee nondiscrimination policies, comprehensive domestic partner benefits, etc.)

Systems Based Practice

23) Explaining and demonstrating how to navigate the special legal and policy issues (e.g., insurance limitations, lack of partner benefits, visitation and nondiscrimination policies, discrimination against children of same-sex parents, school bullying policies) encountered by the populations described above.
24) Identifying and appropriately using special resources available to support the health of the individuals described above (e.g., targeted smoking cessation programs, substance abuse treatment, and psychological support).
25) Identifying and partnering with community resources that provide support to the individuals described above (e.g. treatment centers, care providers, community activists, support groups, legal advocates) to help eliminate bias from health care and address community needs.
26) Explaining how homophobia, transphobia, heterosexism, and sexism affect health care inequalities, costs, and outcomes.
27) Describing strategies that can be used to enact reform within existing health care institutions to improve care to the populations described above, such as forming an LGBT support network, revising outdated nondiscrimination and employee benefits policies, developing dedicated care teams to work with patients who were born with DSD, etc.
28) Demonstrating the ability to perform an appropriate risk/benefit analysis for interventions where evidence-based practice is lacking, such as when assisting families with children born with some forms of DSD, families with prepubertal gender nonconforming children, or families with pubertal gender nonconforming adolescents.

Interprofessional Collaboration

29) Valuing the importance of interprofessional communication and collaboration in providing culturally competent, patient-centered care to the individuals described

above and participating effectively as a member of an interdisciplinary health care team.

Personal and Professional Development

30) Critically recognizing, assessing, and developing strategies to mitigate one's own implicit (i.e., automatic or unconscious) biases in providing care to the individuals described above and recognizing the contribution of bias to increased iatrogenic risk and health disparities.