Simulation and Gender Minority Identity: Where Are We Now, and Where Do We Go from Here?

Research Highlights
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Purpose: This study seeks to establish the scope of standardized patient (SP)-based simulation practices regarding gender minority (GM) identity in medical schools throughout the U.S. and Canada. Since the AAMC published its recommendations for institutional and curricular change to support healthcare outcomes of patients who are LGBT or affected by differences of sex development in 2014, many schools have implemented GM simulation activities.1-4 This study seeks to identify the frequency of GM simulation, its major influences, engagement of subject matter experts, employment of GM vs. cisgender SPs, and special considerations for role portrayal and SP support.

Methods: To understand how SP programs are integrating GM patients in scenarios and employment, we contacted simulation programs at accredited medical schools in the U.S. (n=192) and Canada (n=16). Program representatives were invited to complete a survey about how their program integrates and represents GM patients. Respondents who indicated that their programs had, or planned to, represent GM patients in simulation cases were prompted to consent to a follow-up, semi-structured interview. The survey was completed in November 2018. Interviews with consenting representatives are currently underway.

Results: Live Complete survey responses were submitted by 59 simulation programs. Scenarios in which the patient identifies as a GM were used by 52.5% (31/59) of respondents. Scenarios in which the patient identifies as a sexual minority (lesbian, gay, etc.) were used by 89.8% (53/59) of programs. Programs portrayed GM patients with only GM SPs (9/31 programs or 30.0%), both cisgender and GM SPs (17/31 programs or 53.3%), or only cisgender SPs (5/31 programs or 16.7%). GM SPs were employed by 59.3% (35/59) of responding programs, of which 82.9% (29/35) had GM SPs portray at least some cisgender roles. Some programs used GM SPs/staff or LGBTQ health experts to train the cisgender SPs to portray GM patients. Although relationships with LGBT centers were not significantly associated with having GM roles (2 = 2.9, p=0.09), simulation programs with these relationships were more likely to employ GM SPs (2 = 5.0, p=0.03). Programs that did not have GM content reported barriers including concern for supportively working with GM individuals, refusal by simulation staff to work with GM content, and need for faculty to support the inclusion of this content in the curriculum.

Discussion: Many simulation programs are actively running or developing SP-based simulation activities so that medical trainees experience diverse gender identities in clinical settings, but there is variation in how these cases are developed and cast. Various stakeholders show interest in developing GM case content, but some programs are hesitant to integrate this content because of a desire to first understand best practices and a need for more support from teaching faculty. There is not a consensus among simulation programs about who should portray GM patients.

Significance: Effective simulation hinges on authenticity, which results from careful crafting of cases, engagement of subject matter experts, and attention to the psychological safety of all stakeholders. The Association of Standardized Patient Educators recommends in its Standards of Best Practice that medical educators ensure that cases are based on authentic problems and respect the individuals represented in a case to avoid bias or stereotyping marginalized
A major implication of this study is whether it is more problematic to cast cisgender SPs in GM roles (posing authenticity issues) or to avoid gender minority content because of difficulty recruiting enough GM SPs (posing student exposure issues). Our results suggest that developing a relationship with an LGBT center could help simulation programs recruit GM SPs or GM individuals as part of the training team to authentically portray diverse gender identities.
Enhancing Medical Student Competencies in Transgender Healthcare: A Transgender Standardized Patient Approach

Research Highlights
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Purpose: Behind an explosive increase in media attention and visibility, are over 1.3 million Americans who identify as transgender or gender non-conforming (TGNC)\(^1\). These individuals increasingly occupy seats in classrooms, chatrooms, board rooms, and exam rooms. While lesbian, gay and bisexual people experience clear disparities in health outcomes and care, TGNC individuals experience even greater burdens of health inequity\(^2\). National and local needs assessments describe colossal gaps in physician knowledge of and experience in caring for TGNC people\(^3\). TGNC patients report being asked unnecessary and invasive questions, having to teach their clinician to receive appropriate care, and being refused medical care\(^3\). Todays physicians are accountable to certifying boards and their patients to anticipate and understand the medical needs of TGNC people. As the AAMC acknowledges, demand for medical education to train providers to care for these populations is growing faster than materials can be developed.\(^2\) Standardized patient (SP) based formative activities provide an ideal setting for adult medical learners to encounter the manifold and integrated skill sets required for quality affirming care of TGNC people. Who better to combine lived experience with incorporation of transgender medical competencies than transgender people? We have hired and trained 16 transgender adults from our local community to serve in formative clinical encounters. We measure the educational impact and embracement of curricular competencies around transgender health care by medical students when the SP is a transgender person.

Methods: We recruited a diverse group of 16 transgender individuals to serve as SPs with medical learners. Their ages range from 20 to 70 years with four identifying as Caucasian, ten African American and two Hispanic. All were trained in SP methodology. From this group, five serve on our Steering Committee to aid case development and oversee implementation, SP wellness and psychological safety. Our case and evaluation tools underwent pilot analysis with pediatric and psychiatry residents as learners to insure validity and reliability. The current scenario, a simple evaluation of lower chest discomfort, is completed by all medical students following their core Internal Medicine rotation. SPs evaluate learner performance and provide insight in structured feedback sessions. Following SP directed feedback, students complete a post-encounter survey around knowledge and perceived comfort while taking a history and examining transgender patients. They evaluate their prior preparedness and perceived value of the experience to their education. A free form text box elicits suggestions for content expansion.

Results: Execution of the scenario with third year medical students is well underway. Of these initial 59 students, 81% endorsed comfort in openly dialoguing with a transgender patient, 59% in examining TGNC patients and using affirming pronouns. The majority, 72%, negatively endorsed previous preparation to understand the healthcare needs of transgender patients and 93% felt the experience to be valuable. Students overwhelmingly requested more knowledge around transgender medicine, specifically pharmacology, while many recommended this experience occur earlier in their medical training.
**Discussion:** Closing medical knowledge gaps and providing affirming healthcare for marginalized populations requires bold medical education initiatives. We evaluate use of transgender individuals as SPs to impart and integrate unique knowledge with necessary and complex communication skills. Though other institutions have used cis-gender individuals to portray transgender patients, we sought true authenticity in this formative venture and find it invaluable. Future endeavors include expanded qualitative evaluation of the nuanced communication revealed in these encounters along with expansion of this modality to other institutions, regions and health service professions.

**Significance:** The novel use of transgender SPs enables formative medical student encounters which combine authenticity with actualization. This may uniquely enhance care for marginalized patients by tomorrows physicians.
Is this Opioid Misuse? It Depends

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Purpose: Opioid Misuse, the use of an opioid medication other than as directed or indicated, can lead to serious health consequences or escalating use. (1) In the USA, 74% of opioid abusers acquire their opioids from a single doctor, friend, or relative, and drug diversion is a factor in 50% of overdose fatalities. (2) Factors that identify people at high risk for misuse include pain catastrophizing, younger age, back pain, multiple pain complaints, substance abuse disorders, and other psychiatric conditions including depression and post-traumatic stress disorder. (3) We questioned whether medical students would identify and discuss opioid misuse during a patient encounter and whether they would document the drug use information in the patient note.

Methods: Data for this study were obtained from archived educational materials from our senior medical student clinical skills assessment (CSA). The CSA is a multi-station, standardized patient (SP)-based assessment; a passing performance is required for graduation. In 2018, two scenarios (patients presenting with chronic musculoskeletal pain) were modified to include opioid use. When prompted about modifiers of the pain, the SP was trained to freely volunteer that she has been using Vicodin obtained from someone else (Case 1: from a friend; Case 2: from her husband). She explains that it helps the pain, but makes her groggy. Following the encounter, students had 10 minutes to write a patient note (medical history, physical examination, differential diagnosis, and initial diagnostic plan). We reviewed video-recordings of the encounters and documented [1] whether the SP offered information about Vicodin use and [2] whether/how the student responded to the admission of non-prescribed opioid use. When students did comment on the medication use, we grouped the responses as clarification (e.g.: how much did you take) or patient education (e.g.: it is not safe to use another persons prescription drug). We reviewed the patient notes and transcribed what was documented about the Vicodin use. Analysis included frequency and type of response to the patient and well as frequency of documentation. Chi-square and effect size were calculated.

Results: In 2018, 227 students participated in the CSA; useable data were available for 222 students (Case 1 (friend) n=110; Case 2: (husband) n=112). For Case 1: 71 (64.5%) of students further discussed the patients Vicodin use and 83 (75.5%) documented it in the patient note. In contrast, Case 2: 30 (26.7%) of students discussed, and 97 (86.6%) documented. The difference in rates of discussion was significant between the two cases, chi-square (1, n=222) = 31.909, p=.000 with a medium effect size (Phi=.379). When discussed, a patient education response occurred for Case 1: 40/71 (56.3%) and Case 2: 14/30 (46.7%). No verbal follow-up or documentation was noted for approximately 9% of students on each case.

Discussion: The majority of our students did acknowledge the patients Vicodin use (either written or oral) but opportunities to educate the patient about prescription drug misuse were typically missed. Although literature supports that the most common source of misused prescription drugs are family or friends (4), our study suggests that students are viewing the potential issues with these two sources differently. Possible explanations for our findings include a rationalization for use based on the drug source or bias towards a patient who obtained medications from outside her home.

Significance: Prescription drug misuse, opioids being a high profile example, often starts from a drug source in the home. The best current practice guideline to manage drug diversion is patient education on the dangers of sharing medications and the importance of safe storage and disposal (5). Parameters defining drug misuse, practice having patient conversations, and awareness of
personal bias to ensure all patients are educated should be included early in medical student education.
Integrating Simulation in Basic Sciences Curriculum to Bridge Competency Gaps

Research Highlights
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Purpose: Evidence showed that high-fidelity simulation has been a valuable tool in medical education to provide a safe and active learning environment in clinical clerkships and GME. Challenges and constraints for the integration have been identified, such as group size, schedule, space, faculty facilitators, and instructional design. On the other hand, in the national context of medical curriculum redesign, significant endeavor has been initiated to bridge the gaps between basic sciences and clinical clerkships; between didactic teaching and active learning; between basic science mastery and clinical correlation. Morehouse School of Medicine (MSM) developed an integrative approach to bring simulation-based learning and problem-based learning to the first-year large class-size lecture hall. We will share insights from MSMs experience developing and implementing such an integrative approach to bridge the gaps across different teaching methods, educational technology units, and faculty efforts for future physicians.

Methods: The integration was designed and implemented in the cardiovascular physiology curriculum through two separate interventions in 2018. The first intervention was implemented in the second cardiovascular physiology lecture where the simulated patient case was introduced to the first-year students via a real-time tele-streaming from the simulation center to the lecture hall with a physician faculty in lecture hall presenting the case as well as the simulated real-time vital signs and electrocardiogram (ECG) of the high-fidelity simulator (iStan) with hypertension and subsequently developed myocardial infarction. The second intervention entailed a 90-minute interactive lecture hall session at the end of the cardiovascular physiology curriculum, with the instructor utilizing three pre-designed iStan-interaction videos to present and role model the simulated standardized patient encounter, clinical case presentation, and case development as a clinical trigger for large class-size lecture hall problem-based learning session. Instructor conducted the debriefing of the simulated standardized patient encounter, followed by interactive questioning of students clinical reasoning and utilizing cardiovascular core basic science concepts. Instructor used the simulation scenario to give immediate clinical feedback of students clinical reasoning.

Results: One hundred and three first-year MD students participated in this simulation-integrated cardiovascular curriculum. Their test performances were compared with the students test performance in the previous two cohorts with a total number of 294 students. All three cohorts of students were taught by the same instructor and took the same knowledge test. Multiple regressions results showed that simulation integration is a statistically significant predictor of cardiovascular knowledge mastery (F= 10.414, p =0.001, R² = 0.034) after controlling for students individual differences as reflected in their proceeding MD 1 course scores. Moreover, very impressively, not only the knowledge mastery had improved, the test taking time was also significantly reduced in 2018. The mean test taking time in 2016 and 2017 were 7.26 minutes and 8.31 minutes respectively. Comparatively, the mean test taking time in 2018 was 4.29 minutes, which translates to 41.7% and 48.4% reduction in the mean test taking time respectively. Students survey results also showed that simulation integration was conceived to be very helpful in connecting the concepts presented in lecture to their appropriate application in the clinical settings.

Discussion: Solid basic sciences concept mastery, clinical reasoning, and clinical correlation are recognized as desired competencies from basic sciences curriculum. The introduction of simulation integration in this study showed significantly improved student learning outcomes and positive
learning experiences to bridge the competency gaps. Creating such a successful integration of high-fidelity simulation into our traditional approach has required zealous faculty efforts, learning-sciences-driven instructional design, administration support, and technology units collaboration.

**Significance:** This successful simulation integration in Basic Science Curriculum provides an empirical case of integrating faculty efforts, instructional design, and modern technology to overcome the circumstantial constraints and bridge the competency gaps for our students.