Underrepresentation of Racial Diversity in Simulation: An International Study

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Abstract

AIM The purpose of this study was to: 1) examine the presence of racial diversity in simulation centers globally and 2) determine the opinion of the simulation community related to incorporation of a diversity component into international simulation standards.

BACKGROUND Leading organizations in nursing education recommend improved efforts toward diversity and inclusion. Research suggests a lack of diversity in simulation-based education.

METHOD This study employed a mixed-methods design.

RESULTS Quantitative results demonstrated an underrepresentation of racial diversity in manikins, body parts/task trainers, standardized patients, and simulation facilitators. Two thirds of respondents indicated that international simulation standards should recommend a diversity component. Qualitative findings indicated categories of: 1) challenges of purchasing, realism, and availability; 2) importance of diversity in simulation; 3) representation of the regional population; 4) more diversity considerations needed; and 5) presence of diversity.

CONCLUSION There is a continued need for diversity advocacy efforts in nursing education.

KEY WORDS Diversity – Inclusion – Manikins – Nursing Education – Simulation

The National League for Nursing (NLN) includes diversity as one its four core values (NLN, n.d.). According to the NLN, "diversity and quality health care are inseparable" (NLN, 2016). In a sentinel document "Achieving Diversity and Meaningful Inclusion in Nursing Education," in which the organization calls for reform in nursing education, the NLN emphasizes that current data demonstrate an underrepresentation of racially diverse nurses in the workforce, racism, health disparities, and decreasing graduation rates for black students. The NLN encourages leaders to create academic environments where diverse faculty, staff, and students can flourish (NLN, 2016).

The Institute of Medicine's (2011) *Future of Nursing* report also focuses on diversity and calls for the development and use of new educational models that promote respect for race, ethnicity, geography, background, and personal experience. The simulation laboratory is a prime environment to offer students experiences in racial diversity. However, although simulation has grown as a reputable pedagogy, diversity efforts have yet to be examined in this potentially influential area of education. By promoting value for diversity in simulation-based education, students may be better prepared to thrive in settings with diverse patients and provide more culturally competent care.

Diversity and inclusivity studies in simulation pedagogy are scant, and it is unclear if a lack of diversity in simulation pedagogy impacts learner outcomes. However, it may be speculated that a students' perceptions of inclusion affect their psychological safety and consequent learning. An integrative review of the literature regarding cultural competence and cultural humility in simulation-based education by Foronda et al. (2018) identified that cultural humility is lacking in simulation pedagogy. The researchers suggested diversification of simulation curricula and cultural humility training for both facilitators and learners.

The most robust simulation study conducted to date has served to provide influential and critical data regarding the pedagogy of simulation (Hayden, Smiley, Alexander, Kardong-Edgren, & Jeffries, 2014). For reasons yet to be identified, individuals who identified as minorities in this national study demonstrated the highest attrition rate. This incidental finding may be used to prompt further inquiry into the conversation about the need for diversity and inclusion in simulation centers.

Foronda, Baptiste, and Ockimey (2017) conducted a study evaluating the presence of racial diversity in simulation advertisements. The team discovered that the majority of manikins and body parts (94 percent) displayed at an international conference were white, whereas 6 percent of both manikins and body parts were black. The authors speculated that the presence of racially diverse manikins

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would foster a more inclusive learning environment, especially for learners who identify as "of color." They suggested that standards by the International Nursing Association for Clinical Simulation and Learning (INACSL Standards Committee, 2016) be modified to include diversity and cultural humility to drive simulation practices worldwide (Foronda, Baptiste, Reinholdt, & Ousman, 2016).

Research has identified that current simulation practices may pose a challenge for minority nursing students due to the predominant use of white manikins in simulation laboratories (Graham & Atz, 2015; Graham, Atz, Phillips, Newman, & Foronda, 2018). In other research, minority students have reported the presence of minority faculty, and manikins of color in simulation labs have led to feelings of inclusiveness (Fuselier, Baldwin, & Townsend-Chambers, 2016; Graham & Atz, 2015; Graham et al., 2018). Results of these studies are noteworthy as appropriate nursing care cannot be provided without considering and integrating the race, ethnicity, and culture of patients and their families (Roberts, Warda, Garbutt, & Curry, 2014). Feelings of inclusiveness could contribute to minority student retention in programs of nursing and ultimately impact the representation of minority nurses in the workforce. The purpose of this study was twofold: 1) to examine the presence of racial diversity in simulation centers across the globe and 2) to determine the opinion of the simulation community related to incorporation of a diversity component into international simulation standards.

METHOD

This study employed a mixed-methods design that included a quantitative, descriptive approach and a qualitative content analysis (Sandelowski, 2000) from surveys. The study protocol was submitted to the University of Miami Human Subject Research Office and was determined Not Human Subject Research; thus, the project was not subject to review. The target population included simulationists who were members of professional organizations in simulation. These individuals were deemed most suited to provide information about the presence of diversity in their respective simulation centers.

Survey

The survey consisted of 15 multiple-choice and yes/no items and one open-ended question at the end, inviting participants to "feel free to add further comments related to racial diversity in simulation centers." The survey was developed by a doctorally prepared nurse researcher and pilot tested by four nurse educators prior to use. Electronic surveys using Qualtrics™ were distributed via email through the INACSL LinkedIn membership listserv, the NLN Simulation Educators Google Group, and the Society for Simulation in Healthcare SimConnect. As it is possible for members to be affiliated with one or all of the above listservs, we were not able to determine the number of participants who received emails.

The emails requesting participation contained a description of the study with an embedded link to the anonymous survey. Surveys were distributed in fall 2017. Participation was voluntary, and no personally identifiable data were captured. Quantitative data were captured from the first portion of the survey; qualitative data were derived from the open-ended item.

Data Analysis

Qualtrics survey software was used to tabulate the descriptive statistics. Quantitative data were double-checked for accuracy. The researchers applied Lincoln and Guba's (1985) evaluative criteria to enhance trustworthiness of the qualitative findings. Written responses to the open-ended question were read through several times by two members of the research team (C. F., S. P.) who worked independently. Sandelowski's (2000) method of content analysis was applied to the qualitative data to identify preliminary codes and subsequent categories. The two researchers allowed the data to "dwell" for several months, providing ample time for reflection. Data were repeatedly analyzed by the two researchers until consensus was reached on the emerged categories. To establish credibility, peer debriefing and a negative case analysis were conducted. To establish transferability, thick description with rich, poignant quotations from participants was provided (Lincoln & Guba, 1985).

To establish confirmability, the researchers who conducted the qualitative analysis attended to reflexivity by announcing and carefully recognizing their perspectives and potential biases; one researcher identified as African American and the other as Caucasian. Both possessed extensive international experience and identified as strong diversity advocates. Both researchers attempted to bracket aside bias and use their personal knowledge and experiences as instruments of interpretation, consistent with principles of qualitative research (Lincoln & Guba, 1985).

QUANTITATIVE RESULTS

Respondents (n = 161) represented nine countries. They reported working from Australia (2.5 percent), Brazil (0.6 percent), Canada (2.5 percent), England (1.9 percent), Germany (0.6 percent), New Zealand (0.6 percent), Poland (0.6 percent), Scotland (1.2 percent), and the United States (89.5 percent). They reported the following work position roles: administrator/dean (17.5 percent), simulation educator/instructor/facilitator (56.25 percent), simulation support or technical staff member (10 percent), faculty member (13.75 percent), and other (2.5 percent).

The majority of participants indicated that their simulation center had manikins of color (68.75 percent, n = 110), body parts/task trainers of color (65.63 percent, n = 105), standardized patients (SPs) of color (70 percent, n = 112), and simulation facilitators of color (58.13 percent, n = 93). However, the percentages of manikins, body parts, SPs, and simulation facilitators of color were underrepresented based on perception in comparison to the regional population. The majority of participants indicated that their simulation center had no manikins of color or 20 percent or less were of color (66.88 percent, n = 107).

In reference to body parts/task trainers, 74.38 percent of participants (n = 119) indicated they either had none of color or less than 20 percent. Similarly, in response to the percentage of SPs of color, 75.63 percent (n = 121) indicated none or 20 percent or less. When asked about the percentage of simulation educators/facilitators who identified as "of color" or "black" at their facility, 79.38 percent (n = 127) indicated they had none or 20 percent or less.

The majority of participants indicated that their simulation center had signage or pictures that represented racial diversity (54.72 percent, n = 87); 39.62 percent (n = 63) indicated they did not, and 5.66 percent indicated "I don't know." When asked about the representation of racial diversity in educational videos, 53.75 percent (n = 86) responded "yes" and 18.75 percent responded "no" (n = 30); 27.5 percent (n = 44) indicated "I don't know." Participants were asked if their simulation center demonstrated an inclusive environment for those who identify as "of color" or "black"; 69.38 percent

responded "yes" (n = 111) and 16.88 percent responded "no" (n = 27), with 13.75 percent (n = 22) responding "I don't know." More than half of the participants (58.13 percent, n = 93) believed the racial diversity of the regional population where they worked was represented in their simulation center. With regard to international simulation standards, the majority of participants (66 percent) recommended a diversity component; 20 percent did not, and 14 percent did not know.

QUALITATIVE RESULTS

Five categories emerged from the qualitative data: 1) challenges of purchasing, realism, and availability; 2) importance of diversity in simulation; 3) representation of the regional population; 4) more diversity considerations needed; and 5) presence of diversity. Under the category of presence of diversity, three subheadings were identified: lack of diversity, making efforts to improve, and already incorporating diversity.

Challenges of Purchasing, Realism, and Availability

Participants indicated that they realized diversity in manikins was necessary, but there were challenges related to their attainment. One participant noted, "We are attempting to address this lack. Our wish list contains a dark-skinned simulator. For each scenario we post the client 'photo' with the objectives but are well aware that this is not enough. Many simulators do not come in a dark skin tone option." Another participant indicated, "We would have liked to have a higher percentage of manikins and task trainers that represent racial diversity, but unfortunately selections from the vendors are often limited." Additional comments included: "We have asked for black manikins, but were not able to get them"; "I wish the manikin and task trainer manufacturers would offer more diverse products…age and size as well as ethnicity"; and "We need major manikin manufacturers to have manikins of all skin tones."

Several comments were made regarding the lack of realism in the manikins of color currently offered. One participant reported: "The full manikins look like they have been dipped in chocolate and are not very realistic." Another participant indicated: "Simulators of color are not realistic. There are no variations in hair, nail beds, palms of the hand, soles of the feet, etc. Is a 'dipped' white manikin better?"

Importance of Diversity in Simulation

A second and overlapping category that emerged was that diversity in simulation was important. One participant reported, "I feel strongly that the simulation world needs to change and embrace diversity." Another participant indicated, "My PhD is a study of culturally and linguistically diverse SPs. This area is vitally important." Additional comments included: "very important topic," "worthwhile initiative," "needs to be addressed," "important work," and "essential from an inclusion and diversity standpoint…diversity is a major point in our health system."

Representation of the Regional Population

The third category related to the belief that the diversity offered in the simulation center should relate to the diversity of the region. One participant indicated, "I believe there should be a component that your center should be representative of your environment and if the environment or surrounding is less than 20 percent minority mix, that should be the standard." Another participant indicated, "We are a hospital-based simulation center and we try to match our manikins to our population when it comes to diversity."

One participant wrote, "There is not much a racial diversity in Polish society." Another participant indicated, "The region (Appalachia) in which our sim center is located has an unusually small population 'of color.' This survey has made me think more about this. I don't think we have any task trainers or manikins of color…I think the manikins should represent your demographics as much as possible." Additional comments included: "I believe racial diversity in area simulation centers should reflect the population in their regional areas — not general for all"; "I feel as though our sim center is representative of the area in which we live"; "We fully support cultural diversity at our hospital — we just happen to live in a particularly undiverse area of Australia where only 1-20 percent of our staff/learners are not white"; and "Our level of diversity is representative of our community."

More Diversity Considerations Needed

Although the need for improved racial diversity was acknowledged, the need for additional diversity considerations emerged. Several participants advocated for increased representation of Asian patients as well as the lesbian, gay, bisexual, transgender (LGBT) community. One participant indicated, "We believe the vendors also have a large part to play in this as while many have different skin options they can also be very unrealistic (e.g., … 'tan' colour is more like a fake tan — very orange). Also, not all models are offered in a range of colours. Asian is also underrepresented by the vendors." Another participant indicated, "We should also address the need for difficult conversations and gender re-assignments." One participant wrote, "I think it is more than diversity. It is culture, and socioeconomic, gender identification and sexuality, etc."

Presence of Diversity

The final category that emerged related to the presence of diversity. Three subcategories were noted under this general category.

LACK OF DIVERSITY Many participants indicated a lack of diversity in their simulation centers. One noted: "We use simulation scenarios with diverse patients, but our manikins, simulators, and task trainers do not represent racial diversity well." Another participant wrote that this "is a challenge for my simulation center seeing as the hospital is based in an urban community." Another participant commented: "I don't see racial diversity addressed with the scenarios we are currently using."

MAKING EFFORTS TO IMPROVE DIVERSITY The majority of comments indicated that individuals working in simulation centers were making efforts to improve diversity. Supportive quotes included the following: "We have made efforts to be diverse in equipment and are working to do the same with our standardized patients"; "We are attempting to address this lack"; and "We are challenged here to attract faculty with racial diversity but we are actively trying."

ALREADY INCORPORATING DIVERSITY Several participants indicated they were already incorporating a high level of diversity at their simulation centers. One wrote, "Our sim center incorporates racial and cultural diversity in all simulations used across our curriculum." Additional comments included: "We work with a diverse patient, student, instructor and staff population"; "We are proud of our racial diversity"; and "Every attempt is made to represent diversity in every scenario."

Negative Case Analysis

After developing the categories, the data were reexamined to seek for contradictory statements. We noted that several comments were

made that advocated for the stance of being "color-blind." One participant wrote, "We are all there to learn — it doesn't matter what colour the manikin is." Another participant wrote, "Maybe we should make them [manikins] all green, then people wouldn't care." Still another wrote, "It's more important to focus on the individual worth and value of a person not on the color of someone's skin. Love is color blind."

Several potentially defensive or self-protective statements were also noted that went against the general commentary. One participant wrote, "I feel the fact that you are even raising the question singles out this part of the population. This does nothing to unite the people. We have no problem with hiring other races as long as they are qualified and willing to partner with us to achieve our goals." Another noted, "You cannot hire diverse workers if they do not apply…bad time for this survey to come out when things are already politically charged." One participant expressed concern over change: "Meeting current standards [is] a challenge. Please do not make them more cumbersome [especially] for smaller centers in rural areas."

DISCUSSION

The results of this study suggest that a disparity exists in the context of simulation-based education with respect to representation of racial diversity of manikins, body parts/task trainers, SPs, and simulation facilitators. The data demonstrate that the majority of simulation centers are lacking representation of racial diversity. The qualitative data enhance the quantitative data by providing insight into the values, beliefs, and challenges of the simulation community in relation to diversity.

Several participants told of difficulty in being able to purchase racially diverse manikins because of vendors and the limited offerings of diverse and realistic manikins and products; this finding is consistent with previous research (Foronda et al., 2017). We recommend that simulation manufacturers increase the diversity in product offerings. Furthermore, as diversity in product development increases, we suggest that administrators aptly project their budgets to allow for future purchase of more diverse products, hire diverse SPs, and work to improve diversity in the simulation center.

Most participants demonstrated they valued diversity in simulation. In fact, some were disappointed that the survey focused only on racial diversity when the concept of diversity encompasses so much more. On the other hand, the majority of participants indicated that the amount of diversity in the simulation center should reflect the regional population. Although this may appear logical and may be a good first step in terms of progress, it suggests that there may be an unrecognized majority-based skew in terms of perspective, raising the question, "Are we not a global community?" Should we prepare our learners to just serve their community or should we prepare them to be able to practice in a variety of settings and populations?

The comments in the negative case analysis warrant exploration. Although the participants were likely attempting to be positive toward humanity in general, the notion of being color-blind and the perception that this would be beneficial seems to signify an opportunity for diversity education. "Treating everyone the same" is contraindicated by diversity advocates as this approach may neglect to address individual differences. As we progress toward precision medicine, that is to say, "an emerging approach for disease treatment and prevention that takes into account individual variability in genes, environment, and lifestyle for each person" (National Institutes of Health, 2018), we move beyond a simplistic, one-size-fits-all view. Cross, Bazron, Dennis, and Isaacs (1989) described six stages of moving toward cultural proficiency. Those who advocated that we should be color-blind and treat everyone the same align with the "cultural blindness" stage, a low level on the cultural competence continuum, demonstrating the potential for unconscious bias with a majority-based perspective.

The results of this study indicate that there is a lack of diversity among simulation educators. Nearly 80 percent of participants indicated that they either had no simulation facilitators of color or estimated that about 1 percent to 20 percent of their simulation educators identify as "of color." We recommend that administrators develop long-term strategies to recruit and retain diverse simulation staff and faculty members. Suggestions include introducing a formal mentorship program, advanced training and research support for simulation faculty, and fostering an environment for inclusion with a pipeline initiative that prepares and inspires minority staff/educators to pursue simulation careers.

When asked about whether international simulation standards should recommend a diversity component, two thirds of respondents agreed, with an additional 14 percent indicating they did not know. Given the number of participants who indicated support for the diversity movement and advocated for improvements, organizations that generate simulation standards or accreditation criteria may consider including a diversity requirement. By revising standards, vendors, administrators, and simulation facilitators may be inspired to intentionally address diversity to create more inclusive environments and diverse patient experiences for a global population.

Limitations

This study was limited in several ways. First, the surveys were conducted electronically. Therefore, the qualitative data obtained were obtained through text rather than rich interviews. Although the audience was international, the surveys were only offered in English and the majority of participants were from the United States. As the simulation community spans well over 2,000 members, the sample size of 160 participants may be limited in generalizability.

It important to acknowledge that the team of researchers on this project are diversity advocates, which could have influenced interpretation of the qualitative data. However, the researchers attempted to bracket out the potential for bias and used objective, quantitative measures to supplement the findings. As a starting point, the study focus was solely on racial diversity despite many different types of diversity. This narrow focus limited the amount of data collected in the broader scope of diversity. Furthermore, given the international nature of the study, it is expected that there were cultural differences in perceptions of diversity based on region. However, with the methods employed, the data were examined as a whole rather than separated out by country or region.

Recommendations for Future Research

There is a dearth of literature regarding the importance of designing educational practices in a manner that promotes the success of minority nurses and, indeed, of all nursing students. To advance the science, more rigorous research is needed to determine if the race of manikins and/or SPs influences perceptions of inclusion. To assess for global change or improved racial representation in simulation, the researchers recommend conducting a follow-up study in several years to be able to compare the data.

CONCLUSION

This simple study holds great promise to bring awareness to a large problem in the current international simulation education system, that of underrepresentation of racial minorities in simulation environments. The data presented from this study could be used to influence standards to support the need for a diversity standard. Through improving racial diversity in simulation centers globally, there will be hope for improved perceptions of diversity and inclusion in nursing education and the nursing workforce.

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