



2022

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Developing Cultural Competence in Paramedic Education: An Analysis of Culturally Diverse Training Equipment Amongst Universities in Australia and New Zealand

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Abstract

Aim: This study aims to identify the availability of culturally diverse training equipment across approved paramedicine undergraduate degrees in Australia and New Zealand and explore its impact on a university's ability to teach paramedic care that is culturally safe and competent.

Methodology: Academic staff from 16 university accredited paramedicine programs across Australia and New Zealand were invited to complete an online survey about their access to culturally diverse training equipment and their ability to teach culturally competent paramedic care. Responses were then summarised in tables.

Results: There were a total of 14 responses. The total number of students enrolled in each program ranged from <100 - >500. There are a total of at least 140 ALS manikins, only twelve (n=12) identified as reflecting people of colour. In addition to this, there were 145 cannulation arms, 27 (n=27) were identified as being of colour. Most respondents believed that their university developed emerging skills in culturally competent paramedic care.

Conclusion: Access to culturally diverse training equipment across Australian and New Zealand universities is limited. Access to culturally diverse training equipment impacts a university's ability to teach paramedicine students culturally safe practice through simulation-based learning. Greater access to culturally diverse equipment plays an important role in a university's ability to make students more culturally aware. It was concluded that acquiring more culturally diverse training equipment will lead to greater levels of cultural competence amongst paramedicine students.

I INTRODUCTION

Australia has a diverse population, yet there are still areas that need to be addressed to better accommodate the different cultures within our society. One of these areas is the healthcare industry and more specifically, the prehospital environment. As healthcare practitioners, paramedics must consider racial/ethnic, cultural, linguistic, religious, and sexual characteristics when treating a patient of a culturally diverse background (Minnican & O'Toole, 2020). In emergency medicine, a paramedic's ability to develop rapport in the cross-cultural context is crucial in improving patient outcomes (Ross et al., 2018).

With 30% of the Australian population comprised of residents born overseas from over 90 different countries (Australian Bureau of Statistics [ABS], 2020), it is important that paramedic students are equipped with the knowledge and skills to care for a culturally diverse population. Culturally safe practise can be defined as "the ongoing critical reflection of health practitioner knowledge, skills, attitudes, practising behaviours and power differentials in delivering safe, accessible and responsive healthcare free of racism" (Australian Health Practitioner Regulation Agency [AHPRA], 2021). A paramedic that practices cultural safety is therefore aware of and considers how their care may need to be altered when treating a culturally diverse patient, resulting in paramedic care that is culturally competent. Cultural competence can be defined as a paramedic's ability to tailor and provide healthcare which is ethical and equitable whilst achieving the clinical and cultural needs of the patient in a culturally diverse encounter (Henderson et al., 2018). This may involve requesting additional resources or implementing alternative treatment pathways which respect the cultural boundaries of the culturally diverse patient whilst still ensuring the best care is being provided.

With the paramedic profession gaining recognition as a nationally registered profession through the Australian Health Practitioner Regulation Agency (AHPRA) in 2018 (AHPRA, 2018) and New Zealand graduate paramedics requiring registration with the Kaunihera Manapou Paramedic Council (Kaunihera Manapou Paramedic Council, 2021), standards for paramedic education, professionalism, and conduct have been standardised to ensure that all paramedics exhibit certain professional attributes outlined by these regulating bodies. One of these attributes is the ability for all paramedics to "provide culturally safe care for all patients" (Paramedicine Board AHPRA, 2021). With a bachelor's degree in paramedicine now being the minimum educational requirement for paramedic registration, universities must incorporate topics of cultural safety as part of their academic curricula to ensure that students graduate with the knowledge to meet professional standards set out by regulating authorities (Paramedicine Board AHPRA, 2021; Olsen et al., 2016).

The paramedic profession has a strong focus on simulation-based training, and this continues to be a main component of paramedic education at university (Williams et al., 2016). Simulation-based training involves the use of training equipment such as manikins, fake limbs, and props to create a more immersive environment for the learner (Fuselier et al., 2016). This training equipment can also come in culturally diverse equivalents such as Advanced Life Support (ALS) manikins or cannulation arms which are not of 'white skin', as well as religious/cultural props such as jewellery and clothing. The use of culturally diverse training equipment in simulations can assist in the development of cultural safety as they visually prompt learners to consider cultural aspects of their practice which are specific to the scenario presented to them in the simulation-based training environment (Buchanan & O'Connor, 2020). As a result, when the learner finally comes across a culturally diverse situation in their real-world practice, they will be more confident in their ability to provide culturally safe practice due to the prior exposure that they have had in the simulation-based learning environment.

Although developing cultural competence is a requirement in paramedic education, limited research has been done to assess whether approved paramedicine undergraduate degrees in Australia and New Zealand adequately equip graduates with the knowledge and skills to provide paramedic care that is culturally competent through simulation-based training. By viewing culturally diverse training equipment such as manikins 'of colour' as a trigger for practicing

culturally competent care among paramedicine students, we predict that a university's ability to teach culturally competent paramedic care is impacted by access to culturally diverse training equipment. Therefore, the aim of this study is to identify the availability of culturally diverse training equipment across approved paramedicine undergraduate degrees in Australia and New Zealand and explore its impact on a university's ability to teach paramedic care that is culturally safe and competent.

II METHODS

A Design

This study utilised a cross sectional study of accredited paramedicine higher education programs within Australia and New Zealand.

B Participants

All accredited paramedicine programs within Australia and New Zealand were eligible to participate in the study. A total of 16 Universities (including 2 universities from NZ) were initially invited to partake. However, two university contacts replied with a request for additional invitations to be sent due to multiple campuses running concurrent paramedicine courses. An additional 6 invitations were sent. In total 22 invitations were sent out to accredited institution representatives.

C Instrumentation

An adapted inventory survey was utilised to collect data on student numbers and the availability of culturally diverse simulation equipment. This included three demographic questions to ascertain the program level, student numbers and the academic level of the person completing the survey, and six questions to ascertain the accessibility of students to culturally diverse training equipment.

D Procedures

At each accredited institution the Head of Department was contacted through publicly available email addresses. They were invited to participate in the study or refer a staff member who may participate. Detailed in the email was a link to the online questionnaire as well as an information sheet detailing the study. The study remained open for 21 days. Consent was implied by its completion and submission.

E Data Analysis

Data was transcribed into an excel spreadsheet following submission of the electronic questionnaire. Error checking occurred prior to the analysis.

F Ethics

Ethics approval was granted through Griffith University Human Research Ethics Committee (GU Ref No: GU ref no: 2020/732).

III RESULTS

Of the 22 invitations sent out, 14 representatives from accredited paramedicine programs within Australia and New Zealand completed the adapted inventory survey between October-November 2020. Responses from each program are described in Table 1. Most Accredited programs were bachelor's degree of Paramedicine (n=10) with the remaining programs being a double bachelor's degree of Paramedicine/Nursing (n=3). Academic positions of respondents completing the survey included dean/professor (n=1), senior lecturer (n=6), lecturer (n=5), and

unknown (n=1). Total number of students enrolled in each program ranged from <100 - >500. There were a total of at least 140 ALS manikins, only twelve (n=12) identified as coloured. In addition to this, there were a total of at least 145 cannulation arms, 27 (n=27) were identified as coloured. Answers given in response to the qualitative question can be seen in Table 2. Five of the respondents answered 'yes' whilst one answered 'no' to the question within the survey. Three responses explain that some level of culturally diverse content is taught either in theory units or during lectures. In addition to this, one respondent explained that although content is covered in theory, it is not simulated during scenarios. Other responses indicate basic to considerable levels of culturally diverse teaching for their students. One respondent explained that culturally diverse teachings could be improved. Another university responded that their institution is always reviewing and developing this area of teaching. Furthermore, the same respondent also explained that acquiring manikins with skin colour other than white is currently on their Capital Expenditures (CapEx) list.

Table 1
Quantitative Responses

ID	Accredited program	Number of students enrolled	Total number of ALS manikins	Number of coloured ALS manikins	Total number of cannulation arms	Number of coloured cannulation arms
A	Bachelor	100-250	10	0	12	0
B	Bachelor	>500	"lots"	0	"lots"	0
C	Bachelor	>500	10	0	10	4
D	Bachelor	>500	20	0	"unknown"	0
E	Bachelor	>500	12	0	16	0
F	Double degree	100-250	6	0	4	0
G	Bachelor	251-500	12	4	10	4
H	Bachelor	<100	10	0	10	5
I	Bachelor	>500	10-12	0	25+	6
J	Double degree	251-500	8	0	8	0
K	Double degree	251-500	30	8	30+	8
L	Bachelor	100-250	Missing data	0	7	0
M	Bachelor	<100	4	0	5	0
N	Missing data	Missing data	Missing data	Missing data	Missing data	Missing data

Table 2
Qualitative Responses

Respondent ID	In your own opinion, does your university teach students how to appropriately treat and build rapport with patients of culturally diverse backgrounds?
A	Whilst it is covered in first year lectures, it is not simulated during scenarios.
B	Yes
C	Yes
D	Yes
E	Yes
F	No
G	Yes
H	To some degree, this could definitely be improved.
I	At a basic level
J	Somewhat
K	<i>Data missing</i>
L	Yes - but this is always being reviewed and developed. Manikins with skin other than white is on our Capex list currently.
M	So-so. Topic is covered during vulnerable populations, and also our community engagement unit.
N	Considerable content is dedicated to this in theory units, however there are of course downsides to it being siloed from the practical space

IV DISCUSSION

Our study reported on the prevalence of culturally diverse equipment across 13 universities within Australia and New Zealand that offer an undergraduate paramedic degree. In addition to this, our study offered some insight into how each university views their ability to teach culturally competent paramedic practice. Although there have been international studies investigating the representation of culturally diverse patients in medical simulations (Foronda et al., 2020), to the author/s knowledge, no study of this nature has been done in Australia or New Zealand specific to paramedicine.

The number of culturally diverse equipment including coloured ALS manikins reflecting people of colour is scarce amongst Australian and New Zealand universities. An international study exploring the representation of culturally diverse patients in simulations reported similar results, with many training institutions lacking access to culturally diverse training equipment (Foronda et al., 2020).

Universities with larger student cohorts (251 - >500) were more likely to possess culturally diverse equipment. Whether this is influenced by factors such as better funding or a general willingness for universities to invest in culturally diverse equipment for larger cohorts remains unknown. The lack of culturally diverse equipment may be associated with limited manufacturers producing simulated equipment that reflect people of colour (Foronda et al., 2017). This lack of culturally diverse training equipment may be a lost opportunity for students to practice cultural safety (Foronda et al., 2020). Additionally, studies have found that the presence of culturally diverse equipment during training has shown to promote feelings of inclusiveness for students who identify as “coloured” (Fuselier et al., 2016; Foronda et al., 2017). Therefore, universities should be encouraged to invest more into acquiring culturally diverse equipment to promote and better equip students with the skills to provide culturally competent paramedic care. However, it should be acknowledged that having access to this equipment will not promote cultural competence or cultural awareness on its own (Fuselier et al., 2016). University educators should see the use of culturally diverse training equipment as an opportunity to engage students in further discussions and teaching points related to culturally appropriate paramedic cares.

Simulations enable medical students to practice technical and communications skills in a safe learning environment prior to treating real patients (Chakravarthy et al., 2011). Culturally diverse equipment such as manikins that reflect people of colour can serve as a trigger to prompt students to consider cross-cultural practice (Buchanan & O'Connor, 2020). For example, certain medical presentations may appear differently on coloured skin, and culturally sensitive communication may be required when dealing with culturally diverse patients (Louie & Wilkes, 2018).

Responses suggested that there are difficulties with taking principles of culturally safe practice from the classroom and translating this into the practical space. Further responses expressed developing cultural safety was varied and limited across the sector. Respondents from universities who expressed low cultural safety training also had no ALS manikins or cannulation arms that reflect people of colour. This may suggest a relationship between possessing culturally diverse equipment and a university's ability to incorporate cultural safety and cultural competence into curriculum. Similar conclusions have been drawn by Greenberg and Pierog (2009), who argued that opportunities to teach culturally competent care were at times entirely missed because of the absence of culturally diverse training equipment. Additionally, the universities that utilised coloured ALS manikins and cannulation arms were more likely to believe that they had a curriculum that developed a student's ability to practice culturally competent care. This finding supports our hypothesis that greater access to culturally diverse equipment has a positive impact on teaching outcomes. This also suggests that there is a correlation between access to culturally diverse training equipment and a university's ability to incorporate cultural safety teaching opportunities in a simulation-based learning environment.

Most Australian and New Zealand universities in this study believed that their curriculum taught students how to build rapport with culturally diverse patients. However, many respondents expressed that developing culturally competent skills were only covered on a basic level, acknowledging that more needs to be done in the space of simulation-based training utilising culturally diverse training equipment. A reason for this may be that despite being qualified to teach core medical subjects, teaching staff often hold no formal education or training in cultural diversity (Greenberg & Pierog, 2009). Governing bodies in paramedic education and licensing should therefore implement curriculum which clearly defines the content required to be taught to meet learning outcomes consistent with producing culturally competent paramedicine graduates. Studies have also found that feelings of inclusiveness can be further promoted by the presence of culturally diverse teaching staff, leading to a more enriching learning experience (Foronda et al., 2017). Therefore, universities should conduct recruitment drives which are dedicated towards attracting culturally diverse teaching staff. Administrators should also offer additional training and personal development opportunities which are specifically aimed towards creating a more inclusive workplace to incentivise career progression and improve retention of culturally diverse staff.

Our study has identified a possible link between access to culturally diverse training equipment and a university's ability to embed curriculum that addresses culturally safe paramedic care skills. However, future research is needed to assess whether access to culturally diverse training equipment has an impact on how students view their ability to provide culturally safe paramedic care.

V LIMITATIONS

The research team have acknowledged that responses received from some of the universities regarding student numbers, ALS manikin numbers, and cannulation arm numbers are approximations and do not accurately reflect exact numbers. In addition to this, the criteria to be classified as a culturally diverse piece of equipment in our study was limited to any equipment which was of non-white skin. This perspective failed to account for cultural diversity in other social dimensions including but not limited to, gender, religion, and sexual orientation. Therefore, future studies should include the exploration of a wider range of culturally diverse training equipment such as transgendered manikins and religious props.

VI CONCLUSION

Access to culturally diverse training equipment across universities providing undergraduate paramedicine education in Australia and New Zealand is limited. This study concludes that universities should be encouraged to utilise ALS manikins and cannulation arms that reflect people of colour and the wider population demographic as adjuvant to curriculum that addresses developing paramedic care that is culturally competent. Furthermore, practical classes should aim to simulate principles of cultural competence discussed during theory classes. This may be assisted by making culturally diverse training equipment more readily available to learners. In conclusion, this study highlights the need for universities to invest in culturally diverse training equipment and facilitates future discussions of how culturally diverse training equipment can impact the development of culturally competent health professionals.

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