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Abstract

Ensuring students develop person-centred practice for diverse groups of people across health care settings is an important outcome of undergraduate nursing education. This paper presents the development and evaluation of a learning innovation, an integrated virtual patient case study and complementary online resources for personcentred nursing practice. The virtual patient case study of an Australian Aboriginal woman diagnosed with breast cancer was integrated within four core subjects of a Bachelor of Nursing program, for a total of 600 second-year students. The evaluation of this learning strategy was encouraging. Students reported that the online learning activities were engaging, particularly due to the level of realism, their understanding of Aboriginal Peoples' healthcare needs increased, and they developed therapeutic communication skills, applicable in a variety of healthcare contexts. Staff concerns about student wellbeing when learning sensitive content online were unfounded. When carefully planned, a virtual patient case study and online learning resources can support students to enhance their person-centred nursing practice. Further evaluation, including student outcomes through assessment, is an important next step.

Introduction

Ensuring optimal health care for all populations is a challenge for those who provide health services. Australia is a culturally diverse country inclusive of Aboriginal and Torres

Strait Islander Peoples and a large migrant population. Given the negative health outcomes for Aboriginal and Torres Strait Islander Peoples, due to colonisation (Griffiths et al., 2016; Hunt et al., 2015; Sherwood, 2013), person-centred practices are

paramount. Helping nursing students to develop the requisite knowledge and skills is a responsibility of educators.

With the increasing expectation from universities and students

for diverse approaches to learning, utilising a flipped

classroom offers increased flexibility (Betihavas et al., 2016) and complements in-class

learning. In response, a virtual patient case study (VPCS) supported by interactive, online

resources, integrated across four subjects of a Bachelor of

Nursing (BN) program, were developed to enhance nursing students' person-centred

practice. This paper highlights the development and evaluation of a learning innovation that

has relevance for nursing education given the increasing demand for remote and online

learning.

1. Background and literature

Traditionally, didactic teaching methods were the primary means of conveying knowledge from the teacher to the student (Ramsden, 2003; Betihavas et al., 2016). During the 1990s, educational research shifted the focus from passive to active learning (Bergmann & Sams, 2012; Betihavas et al., 2016; Hussey, Fleck, & Richmond, 2014; Presti, 2016). Within University settings, the use of online resources has created flexible ways of learning (Yuan & Powell, 2013), including flipped classrooms (Bernard, 2015; Betihavas et al., 2016; Herreid & Schiller, 2013; Lage, Platt & Treglia, 2000; Roehl, Reddy & Shannon, 2013).

Flipped classrooms are an example of a student-centred approach to learning.

Underpinned by the adult learning principles of self-direction and self-motivation,

students engage with online learning resources in preparation for classroom learning. In-

class activities, such as discussion, consolidate learning (Betihavas et al., 2016), through the co-production of new knowledge and understanding (Presti, 2016). Increasingly, the flipped classroom has been used in undergraduate nursing programs, and the reported benefits include flexibility and application of critical thinking skills (Betihavas et al., 2016), knowledge development (Hu et al., 2017), improved communication skills and increased enjoyment of learning (Xu et al., 2019), working at your own pace (El-Banna et al., 2017), and increased satisfaction (Njie-Carr et al., 2017).

Case studies that replicate real-life patients and clinical situations assist nurses to develop their understanding, critical thinking and decision-making skills (Hooper, 2014; Huang et al., 2012; West, Usher & Delaney, 2013) and can be readily used as online learning resources. The VPCS developed for this project featured an Aboriginal person. In Australia, the original population are Aboriginal and Torres Strait Islander Peoples, the traditional owners of the land, and 3.3 % of the country's population identify as Aboriginal and Torres Strait Islander (Australian Bureau of Statistics (ABS), 2018a).

Social, political, and historical factors adversely affect the health outcomes of Aboriginal Peoples (Griffiths et al., 2016; Hunt et al., 2015; Nugyen, 2008; Sherwood, 2013). The reduction of health disparities in Aboriginal Peoples is dependent on culturally safe health care that supports empowerment, focuses on the person's experiences of the care, and is person-centred (Nugyen, 2008). This requires health professionals to communicate effectively, support the person's decisions about care, and collaborate with the family (Australian Institute of Health and Welfare (AIHW), 2019b).

The VPCS depicted an Aboriginal woman's journey from accessing regional community health services through to treatment in a city-based acute care hospital (see supplementary information). It showcased person-centred interactions with

experience, highlighted effective communications, and demonstrated supported decision making. The students engaged with the self-paced VPCS and related online learning resources prior to in-class learning activities that applied knowledge to practice.

2. **Design**

2.1 Setting and participants

The participants were 600 second-year nursing students, at a large urban Australian University, who were enrolled in four subjects of the Bachelor of Nursing (BN) program: mental health nursing, medical-surgical nursing, nursing care of the older person, and contemporary Indigenous health and wellbeing. Each of the subjects had approximately 150 students. Second-year students were purposely targeted to build on their first-year foundational knowledge and clinical experiences.

2.2 Development of the virtual patient case study (VPCS) and related online learning resources

The development of the VPCS incorporated two of the Australian national health priority areas - cancer and mental health (AIHW, 2017a). The VPCS was based on an older Aboriginal woman (50 years of age), *Diane Coorah*, from regional Australia, with a diagnosis of metastatic breast cancer. An Aboriginal woman of 50 years of age is considered an older person due to a lower life expectancy compared to other Australian populations (ABS, 2018b; AIHW, 2019a). Aboriginal healthcare educators were consulted to ensure authenticity of the VPCS. Furthermore, experienced breast care nurses from a prominent organisation, the McGrath

Foundation, (http://www.mcgrathfoundation.com.au/Default.aspx), were also consulted.

(i) Co-production of the online learning modules

External funding (Health Workforce Australia) supported employment of a learning technologist/designer who collaborated with the academic team in the co-production of the online modules. An adaptive eLearning platform project partner (https://www.smartsparrow.com/) was utilised. Online modules were created for each of the four subjects and encompassed the VPCS, audio-visual (AV) vignettes of personcentred nurse-patient interactions, relevant websites, and interactive questions with immediate (pre-configured) feedback. The success of the project team is attributed to several factors, including a designated team leader, regular team meetings, a highly skilled learning technologist, experienced content specialist academics, and the enthusiasm and skill of the Aboriginal actor who portrayed the patient.

(ii) Integration of the VPCS and online resources as a module within four subjects

The specific learning objectives within each of the four subjects (six-credit point weighting per subject) and addressed in the online modules are expanded below. Students undertook the self-paced module in the week prior to attending in-class learning. Each of the modules required approximately two hours of students' time

(a) Mental health nursing

The learning objectives of the subject addressed in the online module were the development of person-centred practice, particularly therapeutic communication skills in the context of experiences of emotional and psychological distress. The module featured AV exemplars of nurse-patient interactions and formed the basis for the development of therapeutic communication skills within the other three subjects.

The nurse-patient interactions took place in an Aboriginal Medical Service, a primary healthcare setting, where the patient learnt of her cancer diagnosis.

The interactions were unscripted to allow the actor, portraying the patient, to draw on her own lived experiences and to ensure that the nurse's responses were authentic. Responses such as fear and grief were portrayed, and therapeutic communication skills that engendered an understanding of the patient's perspective, including the wider family (Geia et al. 2011), were demonstrated by the nurse. In-class, using carefully devised role-play scenarios, students practised active listening for themes and feelings and empathic responding, followed by teacher-led reflection on the application of learning to nursing practice.

(b) Medical-surgical nursing

The learning objectives of this subject addressed in the online module included development of knowledge related to diagnosis and in-hospital treatment of metastatic breast cancer, the side effects of treatments, initiating palliative care, and person-centred nursing practice. The AV vignettes of the nurse-patient interactions reflected nursing care related to medical treatments and fears of losing dignity and independence as the disease progressed. They demonstrated cultural nuances including the patient's responsibilities as an Elder in her community, her connection to family, and her role in the transmission of Aboriginal knowledge, history, and beliefs.

Ceasing active treatment and accepting impending death were explored during facilitated in-class discussions about palliation in the acute care setting, 'do not resuscitate' orders, spiritual care assessment, and communicating with patients about death

and dying. These aspects of patient care are not often afforded to students during clinical placement experiences (Gillan, van der Riet, & Jeong, 2014).

(c) Nursing care of older people

The learning objectives in this subject focused on developing skills of person-centred practice, therapeutic communication, and Indigenous cultural respect through the medium of palliative care. The online learning module was based on end of life care within the hospital setting. The patient was in the last few days of life and had chosen to remain in hospital rather than 'return to land' for her end-of-life care. It provided students with insights about how to support patients who are imminently dying and their families, particularly the cultural and spiritual implications, and staff self-care practices.

Further nurse-patient interactions in the AV vignettes depicted the signs of imminent death and therapeutic responding. Content was based on palliative care guidelines (Ravenscroft et al., 2010) and curricula guidance from the Palliative Care Curriculum for Undergraduates (PCC4U) (http://www.pcc4u.org/). In laboratory classes, students practised managing a syringe driver as part of pain relief strategies. Incorporating palliative care was an important feature that is generally under-represented in nursing curricula (Gillan et al., 2014).

(d) Contemporary Indigenous health and wellbeing

Within this subject, the learning objectives were the development of Indigenous cultural respect and knowledge and understanding about the importance of "Closing the Gap", an initiative of the Governments of Australia to address the significant disparity in health and wellbeing between Indigenous and non-Indigenous Australians

(http://closingthegap.dpmc.gov.au/). Within the online module, links to key websites, government initiatives and reports, and relevant community groups were central to ensuring students' awareness of the current issues experienced by Aboriginal peoples.

Historical perspectives and government actions, which had profound effects on the current health and wellbeing for Indigenous Australians (Sherwood 2013), were included. Exploration of complex issues affecting the health and wellbeing of Aboriginal peoples was facilitated in a safe in-class environment by academics who had completed specific training by Indigenous experts and elders.

Figure 1 conceptualizes the VPCS within the four subjects and the related influences that informed its development.

(insert figure 1 here)

Figure 1: The influences that informed development of the virtual patient case study

(e) General content

In addition to information derived directly from

the VPCS, the online learning modules also focused on the pathophysiology of metastatic breast cancer, relevant diagnostic tests, evidence-based symptom management, support services, cancer mortality rates in the Australian Aboriginal population, and Indigenous ways of knowing, being and doing regarding health and wellbeing. Table 1 provides a summary of the main resources used to develop the VPCS.

(insert Table 1 here)

2.3 Evaluation

A feature of all the online learning modules was an opportunity for voluntary, anonymous student feedback. The built-in evaluation comprised a twelve-item survey, including five open-ended questions about students' learning experiences. The open-ended questions are presented in Table 2. Each of the four subject coordinators extracted the students' responses to the open-ended questions related to their subject's learning objectives. The first two authors undertook an inductive content analysis of the responses (Olson, Young, & Schultz, 2016), and five themes were identified.

(Insert Table 2 here).

2.4 Ethical considerations

The project was considered by the University as a low-risk evaluation of a teaching and learning activity that did not require ethics approval. Participation in the online student evaluation was anonymous, voluntary, and conducted in the students' own time. Informed consent to participate in the evaluation was assumed to be given when a student completed and submitted the survey. The online modules were complementary but separate to the face-to-face teaching and assessment within each of the four subjects. The teaching staff were not involved in the built-in evaluation process and students' decisions to participate or not did not impact on their assessment outcomes in the subjects.

3. Findings

The analysis of the student responses identified the following five themes: therapeutic communication skills development, engagement and the level of realism stimulated learning, preparation for palliative care, greater insight about Aboriginal people, and improving the online experience.

3.1 Therapeutic communication skills development

Students found that the AV vignettes where experienced nurses interacted with the patient across a range of practice contexts, provided opportunities to enhance their therapeutic communication skills:

Being given an example as to how a successful therapeutic relationship can be established with a patient through effective communication has been helpful in providing techniques I can use in my scope of practice.

This is a phenomenal new way of learning ... much easier way to prepare for tutorials than just reading a textbook ... we can now see and hear real nurse-consumer communications!

Watching experienced nurses' interactions highlighted that talking about concepts such as loss and death need not be daunting:

I think the spiritual assessment of Diane Coorah was useful because the videos showed how nurses go about handling sensitive topics and the language they use.

3.2 Engagement and the level of realism stimulated learning

The active learning inherent in the modules was considered engaging and interesting:

What a fantastic way of learning. I really enjoyed this module and feel like I ... will be able to use these forms of communication... during clinical placement.

This sort of learning is very helpful and encourages students to learn interactively and actively. I love the structure and the pace of the module and how it managed ... to sustain my interest and attention.

This is a phenomenal new way of learning...much easier way to prepare for tutorials than just reading a textbook or listening to 'dry academic' points.

The depictions of the nurse-patient interactions were valuable learning experiences because of the realism portrayed:

They were really excellent demonstrations...the role-playing/ acting was great and credible...Very subtle and realistic demonstrations.

You can actually picture out what it should it look like in the real life. I find this part the most helpful since it is an actual mental health nurse and patient interaction.

...We could see and hear real nurse-consumer communications!

3.3 Preparation for palliative care

There was a concern that students would become distressed with the learning content that focussed on end of life care when viewed off-campus. Given that 45% of the students noted that the content was *a little distressing* confirms the importance of in-class discussion to follow-up the related issues. Importantly, 88% of students reported improved confidence to work with people who have palliative care needs:

Gave me ideas of how to approach palliative care patients...Not as anxious about the thought of talking about death to patients.

3.4 Greater insight about Aboriginal People

As some students had never met an Aboriginal person, presenting the VPCS within each module of the four subjects allowed students to see a realistic portrayal of an Aboriginal woman in the context of her ordinary life, albeit during the crisis of an illness:

... the Diane Coorah case ... gave us a far better insight and far more information on issues relating to Aboriginal people.

3.5 Improving the online learning experience

Students identified several ways in which the online learning experience could be improved, related to variable internet access when off-campus, the time required to download resources, and the duration of some AV vignettes.

4. **Discussion**

The aim of this project was to create and evaluate an integrated virtual patient case study (VPCS) and related online learning resources (self-paced online module) within four, six-credit point subjects of a Bachelor of Nursing program. The overarching aim of the three nursing practice subjects was to develop the students' person-centred nursing practice. Such practice situates the person and their beliefs, values, and preferences at its centre and is supportive of the individual's decision-making (McCance & McCormack, 2017). To achieve this, each of the subjects focused on one or more of the following: therapeutic communication skill development, supporting patients' decisions about health care, and

delivering evidence-based and culturally appropriate nursing practice in the context of palliative care. The aim of the Indigenous health and wellbeing subject was to increase this generation of students' awareness of the impacts of historical, social and political actions on the health and wellbeing of Aboriginal peoples.

Students reported development of their therapeutic communication skills, enjoyment of and engagement with the learning, particularly the applicability of the nurse-patient interactions to their own practice, preparation for palliative care, and increased awareness of issues facing Aboriginal peoples. Suggestions for improving the online learning experience were also forthcoming. The aims of each of the four subjects were realised through this innovative approach to learning. The use of an authentic VPCS

to model preferred, nursing practice and therapeutic interactions demonstrated to students how this would look in real practice. Not only was it engaging, but students reported feeling less anxious when talking about loss and death, and they were more informed about cultural nuances and issue for Aboriginal peoples.

Key to the success of this learning innovation was the expertise and collaboration of the interdisciplinary project team. The adaptive eLearning platform was developed by smartsparrow, a learn-tech company. The academic team developed the VPCS and then each academic worked with the highly skilled learning technologist/designer to coproduce engaging online learning experiences for their subject. This required a commitment over a two-month period to work in partnership, utilising each other's expertise, and regularly dedicate time to develop and refine the resources prior to their implementation. Betihavas et al., (2016) note the importance of "time and resources (including educational technology and expertise)...to develop unit content and facilitate the flipped

classroom" (p.20). In a review of flipped classrooms by Njie-Carr et al., (2017), the patient case studies were often a single focus rather than the complex and integrated VPCS that is presented in this paper. Certainly, there was no indication of an Aboriginal patient case study amongst those reviewed by Betihavas et al., (2016) or Njie-Carr et al., (2017).

Developing an authentic VPCS, realistic nurse-patient interactions, and other online resources encouraged students to take a participatory role in their learning by preparing before engaging with in-class activities that applied theory to practice (Betihavas et al., 2016). This is a continuing challenge that others have reported despite the change in the mode of delivery (Betihavas et al., 2016; Bingen et al., 2019; El-Banna et al., 2017). Most students took greater responsibility for their own learning rather than expecting information to be 'delivered' to them passively (Hussey et al., 2014; Presti, 2016) and worked through preparatory materials at their own pace and convenience.

Embedding the VPCS across four subjects provided opportunity for students to develop a greater understanding of Aboriginal people's views of health, wellbeing, and illness. Portrayals of Aboriginal Australians are frequently stereotyped and stigmatising (Sweet, Dudgeon, McCallum, & Ricketson, 2014). The authenticity of the VPCS was maximised through consultation with Aboriginal healthcare educators and by employing an Aboriginal actor with lived experiences to portray the patient. Students reported that these interactions afforded them previously unknown insights about the health and other issues facing Aboriginal people.

Caring for people with palliative care needs is a fundamental part of nursing practice, irrespective of care setting. Knowing that students were not particularly troubled by viewing AV vignettes about palliative care on their own was a positive finding. Incorporating this type of content validated the online learning medium as 'safe' provided opportunity was

available for discussion. Additionally, the students reported confidence to have conversations with patients about palliative and end of life care.

Integrating the concepts of person-centred practice around a central VPCS provided continuity, engaging and meaningful learning for students, and greater understanding of cultural sensitivities. The unscripted nurse-patient interactions demonstrated a range of therapeutic communication skills and were complemented with interactive questions and immediate feedback that assisted the development of their person-centred practice.

Two major areas for improvement were flagged by students - the need for shorter AV vignettes and improvements in IT functionality. The IT concerns related to download times, likely due to internet access or variation in students' home internet download speeds. As evidenced during the current COVID-19 pandemic where the majority of learning has moved to an online format, internet access and download speeds are limiting factors and a major disruptor to equitable student learning experiences (Morin, 2020).

For the future, more generations of family members could be added to the VPCS and assessment tasks could be embedded in each subject to gauge the impact of this mode of learning. New VPCSs featuring a diversity of patients and families could be created to further develop person-centred nursing practice. Overall, given the impacts of COVID-19, this innovation is a timely creation and an effective example of how to deliver remote,

online content in a practice-based discipline to enhance nursing students' skill development.

4.1 Limitations

The main challenges encountered with creating the VPCS centred on technological issues with the eLearning platform, which have improved following software updates. Further limitations include that the project was conducted at one university, and students who provided feedback are likely to have been more engaged with the learning.

5. **Conclusion**

The VPCS supported by interactive, online resources integrated across four subjects of a Bachelor of Nursing (BN) program achieved positive learning outcomes. Students engaged with and enjoyed the learning which offered insights about nursing care of an Aboriginal woman with complex health issues. The level of student engagement and preparation for on-campus classes exceeded the academic team's expectations. Students reported that this approach increased their understanding and assisted their development of person-centred nursing practice.

Considerations for others that should be determined up-front include the length of AV vignettes and indicating internet access requirements. Future applications include incorporating assessments within the online learning modules and expanding 'the family' within the VPCS. To gauge the translation of learning into practice, research about students' practices during clinical placements and patients' experiences of them, are warranted.

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