Title page

Simulation videos presented in a blended learning platform to improve Australian nursing students' knowledge of family assessment.

Elisabeth Coyne, Valda Frommolt, Hazel Rands, Victoria Kain, Marion Mitchell.

Coyne, E. BN MN Hons Grad Cert (Higher Ed) PhD

Senior Lecturer, Director of Master of Acute Care, School of Nursing & Midwifery

Menzies Health Institute, Griffith University, 4131, Queensland, Australia

e.coyne@griffith.edu.au

Frommolt, V. RN MAdvPrac

Lecturer, School of Nursing & Midwifery

Menzies Health Institute, Griffith University, 4131, Queensland, Australia

(07) 33821086

v.frommolt@griffith.edu.au

Rands, H. BN Grad Cert (Clin Educ) MAdvPrac Hons

Lecturer, School of Nursing & Midwifery

Menzies Health Institute, Griffith University, 4131, Queensland, Australia

h.rands@griffith.edu.au

Kain, V. RN MN PhD

Director of Undergraduate Programs, School of Nursing & Midwifery

Menzies Health Institute Queensland, Griffith University, 4131, Queensland

+61 7 373 55221

v.kain@griffith.edu.au

Mitchell, M. L. BN(Hon), Grad Cert (Higher Ed), PhD

Menzies Health Institute Queensland, Griffith University and Princess Alexandra Hospital,
Brisbane, Australia. +61731767772

marion.mitchell@griffith.edu.au

Corresponding Author

Dr E. Coyne,

Senior Lecturer, School of Nursing & Midwifery

Griffith University, Logan Campus, University Drive

Meadowbrook. Qld 4131

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Simulation videos presented in a blended learning platform to improve Australian nursing students' knowledge of family assessment.

Abstract

The provision of simulation to enhance learning is becoming common practice as clinical placement becomes harder to secure within Bachelor of Nursing programs. The use of simulation videos within a blended learning platform enables students to view best practice and provides relevant links between theory and practice. Four simulation videos depicting family assessment viewed by a cohort of Australian undergraduate nursing students were evaluated. These videos were professionally developed using actors and experienced family nurses.

Surveys were used to explore the students' self-assessed knowledge, confidence and learning preferences before and after exposure to blended learning resources. Students' engagement with the simulated videos was captured via the Learning Management System.

Time 1 survey was completed by 163 students and Time 2 by 91 students. There was a significant increase in students' perceived knowledge of family theory Item 1 from a mean 4.13 (SD= 1.04) at Time 1 to 4.74 (SD= .89) ($Z = -4.54$ $p < .001$) at Time 2; Item 2- Knowledge of family assessment improved from mean 3.91 (SD= 1.02) at Time 1 to 4.90 (SD= .67) ($Z = -7.86$ $p < .001$) at Time 2. Also a significant increase in their confidence undertaking family assessment Item 5 from a mean 3.55 (SD= 1.14) at Time 1 to 4.44 (SD= .85) ($Z = -6.12$ $p < .001$) at Time 2. The students watched the videos an average of 1.9 times.

The simulated videos as a blended learning resource increases the students' understanding of family assessment and is worth incorporating into future development of courses.

Key words: Simulated video, blended learning, undergraduate nursing education, Information technology

Introduction

Patient and family-centred care [PFCC] is becoming a focus within our health care system and health professionals increasingly recognise that health adversity affects not only the patient but also their family (Australian Commission on Safety and Quality in Health Care, 2018; International Family Nursing Association (IFNA), 2017). As the healthcare environment becomes more complex, the academic presentation of information must change to meet these challenges by presenting clinical information in contemporary formats to teach complex skills (Coyne et al., 2018; Johnston et al., 2017). Family assessment is a crucial skill to ensure that nursing care is inclusive of the patient and family as a unit of care. There are several theoretical frameworks that support family assessment to promote PFCC and the Australian Family Strengths Nursing Assessment and the Calgary Family Assessment Framework are regularly used for teaching PFCC in nursing programs in Australia (Barnes & Rowe, 2013; McMurray & Clendon, 2015). Teaching with simulation supports the ability to actualise PFCC by providing audio-visual examples of how to tailor care for the patient and their family (Coyne, Grafton, Reid, & Marshall, 2017; Hay, Carr, Dawe, & Clark-Burg, 2017).

Family assessment, should form part of each patient's assessment in order to promote a PFCC relationship where patient and their family's needs are understood and aim to be met (Hay et al., 2017; Wright & Leahey, 2013). Nurses' knowledge, understanding and ability to conduct quality family assessment and the implicit need to communicate effectively is important for PFCC (Coyne & Dieperink, 2016). However, developing a connection with families through such therapeutic communication is a learned clinical skill (Tobiano, Chaboyer, & McMurray, 2013; Yeonja, Eunju, &

Eunjung, 2015). Additionally, nurses' ability to empathise is a crucial aspect of effective patient/family interactions, and needs to be incorporated into nursing education (Rebeiro, Edward, Chapman, & Evans, 2015).

It is important that students of nursing are provided with opportunities and experiences before they enter the clinical area in order to acquire skills and techniques that are necessary for practice (Cardoso et al., 2012; Hibbert et al., 2013). Typically, students have limited real-life opportunities to practice and improve their communication and assessment skills of family units (Abelsson, Rystedt, Suserud, & Lindwall, 2016). This lack of opportunity extends to qualified clinicians who may lack experience of therapeutic communication and thus struggle to enact PFCC (Coyne et al., 2017; Segaric & Hall, 2015). New ways to enhance engagement and positive learning outcomes from clinical educational opportunities related to PFCC communication are necessary (Bell, 2014; Bond, 2009).

The integration of new technologies within tertiary education such as simulation, online learning, and blended learning lend support to student focused learning. Blended learning has been defined as a combination of face to face and online methods often incorporating blocks of learning with online components revisited (Brown, 2016; Karoglu, Kiraz, & Özden, 2014). Simulation has been defined as the replication of real-world situations, which allows the student to practice the skills, reflect and be active in the learning process (Lavoie & Clarke, 2017; MacLean, Kelly, Geddes, & Della, 2017). Providing educational material in a range of formats provides students with choices of collaborative and individualised learning opportunities (Karoglu et al., 2014).

Blended learning involving modern technologies has proven to be a valuable tool when teaching nursing practice (Arguel & Jamet, 2009; Johnson et al., 2010). One teaching strategy is the use of simulation videos to aid the development of nursing skills, knowledge and attributes in areas where real-life opportunities are not always available (Lynch, Barr, & Opreescu, 2012). Simulation videos that offer visual demonstrations of nursing care in an environment that reflects a real-life setting, provide a context for student learning that links classroom teaching methods with clinical practice (Duncan, Yarwood-Ross, & Haigh, 2013; Holland et al., 2013).

The benefit of blended learning methods is that they cater to different student learning preferences (Chan, Parco, Sihombing, Tredwell, & O'Rourke, 2010; Kelly, Lyng, McGrath, & Cannon, 2009). This is an important acknowledgement that "one size does not fit all". Simulation videos, as part of a blended learning model, support student engagement when teaching materials incorporate reflective questions, prompts for further reading and activities for students (Sidebotham, Jomeen, & Gamble, 2014). Importantly, blended learning methods provide equitable student opportunities offering flexibility of access to resources, thereby allowing students to work at their own pace and at the location of their choosing (Karoglu et al., 2014). Students report higher motivational levels associated with blended learning than with traditional passive approaches to education, as they can engage with activities, understand expectations and prepare for clinical practice at their own pace (Brunsell & Horejsi, 2013; Johnston et al., 2017).

Professionally developed videos that demonstrate clinical skills ensure consistency across student groups and enable students to revisit concepts, which enhance standards of education (Holland et al., 2013; Kelly et al., 2009). Using a blended learning approach encourages student interaction in multiple ways and promotes deeper learning (Sidebotham et al., 2014) and have the ability to enhance the acquisition of knowledge and practical skills within health care (Forbes et al., 2016).

Limited evidence exists, however, on the effectiveness of simulation videos as part of blended learning materials, used to improve nursing knowledge and skills (McCutcheon, Lohan, & Traynor, 2016). In order to respond to this research gap, the current study aimed to investigate students' self-assessment of their knowledge and confidence in conducting family assessment after exposure to blended learning materials containing simulation videos of family assessments. This study also explored the students' learning preferences in relation to how the material was delivered. Specifically, this study was undertaken to answer the following research questions:

- 1) Does the presentation of simulated family assessment videos within a blended learning method influence the students' knowledge of family assessment?
- 2) Does the presentation of simulated family assessment videos within a blended learning method influence the students' confidence of family assessment?
- 3) What style of learning do students prefer?

Method

An exploratory descriptive survey design was used to address the research aims. A Time 1 survey was distributed before students had access to the simulation video resources, providing a baseline measure. The Time 2 survey was completed at the end of semester. Both surveys contained items around knowledge of family assessment, confidence in family assessment, family engagement and, learning preferences to allow for comparison. Student engagement with the videos was measured via statistics from the university's learning management system which facilitated data collection of student views of the video resources. Information about the study and an invitation to participate was provided in several formats: student email, an invitation on the course's web site and information sessions during face-to-face tutorials. Surveys including an information sheet were administered in a face-to-face classroom by tutors with consent implied by completion of, and

return of the survey. No identifying data was collected and all results were reported as aggregate scores.

Participants and site

Participants were recruited from the second year of a three year Bachelor of Nursing program at a metropolitan multi-site Australian university. To be eligible to participate, students needed to be enrolled in the *Child and Family Nursing* course, which had a focus on family nursing including family assessment. There were 619 students enrolled in the course across three campuses.

Measures

The paper-based survey was developed from previously published surveys exploring students' engagement with simulation videos and blended learning resources (Hay, Carr, Dawe, & Clark-Burg, 2016; Kelly et al., 2009; Weeks & Horan, 2013). Demographic data were collected in relation to participants' age, gender, and enrolment status [domestic, international; part-time, full-time].

The Time 1 survey had 12 items with a six point Likert scale (1 =strongly disagree to 6 = strongly agree). It had four components including a self-assessment of knowledge, confidence, and students' family engagement and learning preferences. The Time 2 survey had 20 items; eight extra items related to video access, adapted from Kelly et al. (2009). An open-ended item allowed participants to add comments if desired. See Table 1 for Survey items including the additional items in Time 2 survey.

Procedure

Students were invited to participate by completing the paper-based survey during a face-to-face tutorial in week 1 and week 13 of semester. Students were assured that their participation or refusal to participate would in no way affect their marks for the course and any concerns were addressed at this time.

Ethics

Ethics approval was obtained from the university human research ethics committee prior to commencement (GU REF NO: 2016/057). Ethical standards were maintained at all times, students were provided information about the study with an opportunity to ask questions, and were informed they were under no obligation to participate. They were informed that they had the right to withdraw at any time, and that the responses were anonymous. No identifying student data were collected.

Data analysis

Data analysis was conducted using a statistical package (SPSS version 22). All data were checked for accuracy and completeness (Polit, 2010). Descriptive statistics including frequencies and percentages, mean and standard deviation were completed for the demographic data and survey items. Time 1 and Time 2 were compared using nonparametric Mann–Whitney U-tests to test for differences across the two time periods. A Wilcoxon signed ranks test was used to measure the change in scores from Time 1 to Time 2. A level of significance was set at $p < 0.05$. Website tracking data from the university Learning Management System (LMS) measured the timing, frequency, and duration of access for individual students within the online learning platform. Qualitative comments from the one open-ended item in Time 2 survey were collated and presented to add context to the quantitative data.

Simulation video resources

Family assessment scenarios were developed from case studies supported by the authors' previous research (Coyne, Wollin, & Creedy, 2012; Mitchell & Chaboyer, 2010; Wallace & Coyne, 2013) and the expertise of the current study's team members. Full scripts were written and reviewed by all members of the team and external experts. Paid actors were used to portray the patient and their family members to ensure quality acting and to avoid ethical concerns regarding privacy (MacLean et al., 2017). The health workers in the scenarios were portrayed by experienced family nurses and a practising social worker.

Four videos were created, each depicting divergent family nursing scenarios. Following extensive preparation, each video was professionally filmed and edited. The length of each video was between eight to ten minutes in duration as recommended (Forbes et al., 2016). Each video commenced with written information about the case study on the opening viewing screen. Relevant questions structured around the learning objectives and best practice (Coyne et al., 2018; Mitchell et al., 2015), were included at the end of the simulation video to engage students and prompt reflection. The completed simulation videos were available on the course's online portal for access by students throughout the 13 week semester. A brief description of the family assessment simulation videos and YouTube links is presented in Table 2.

Results

A total of 163 participants completed the survey at Time 1 with a response rate of 26%. Of these 136 were females (83%) and 27 males (17%). At Time 2, 91 responses were received (response rate 15%) with 82 (90%) females and 9 male (10%) participants. The participants had a mean age of 25 years. The majority were domestic, with a full-time course load. Table 3 outlines the participant demographic characteristics. Insert Table 3 Participant demographic

Table 4 presents the individual item mean scores and difference across Time 1 and Time 2. There was a significant increase in participants' overall self-assessment of knowledge of family assessment between Time 1 and Time 2. There was a significant increase in Item 1 - Knowledge of family theory from a mean 4.13 (SD= 1.04) at Time 1 to 4.74 (SD= .89) ($Z = -4.54$ $p < .001$) at Time 2; Item 2- Knowledge of family assessment improved from mean 3.91 (SD= 1.02) at Time 1 to 4.90 (SD= .67) ($Z = -7.86$ $p < .001$) at Time 2; and Item 3 – Knowledge of family models improved from a mean 3.56 (SD= 1.03) at Time 1 to 4.76 (SD= .75) ($Z = -8.86$ $p < .001$) at Time 2. Additionally, a significant increase was found in both items within the confidence component where students responded that their experience using a family assessment Item 4 increased from a mean 3.35 (SD= 1.3) at Time 1 to 4.09 (SD=1.14) ($Z = -4.59$ $p < .001$) at Time 2 and in Item 5 where their confidence in completing a clinical family assessment increased from a mean 3.55 (SD= 1.14) at Time 1 to 4.44 (SD= .85) ($Z = -6.12$ $p < .001$) at Time 2.

Understanding the importance of family communication, as well as respect for family, and the sense of importance of family remained high (Table 4 Items 6-9 Mean 5/6) across Time 1 and Time 2. In relation to participants' learning styles, participants indicated that they had a preference for learning material which was interactive such as video resources and their preference for interactive learning resources Item 12 significantly increased over the time of the project from a mean of 5.12 (SD= 1.15) to 5.49 (SD= .66) ($Z = -2.24$, $p < .025$). Three quarters of the participants reported that they viewed the simulation videos and indicated they were useful and that they would use them again in the future to better understand family communication strategies.

A significant difference was identified between participants who were part-time compared to those who were full-time participants in relation to their learning preference. Full-time respondents reported they preferred to watch the videos in comparison to their part-time counterparts who

reported a preference for written material Mean part-time 5 (SD=1.09) to full-time 5.38 (SD= .91) ($Z=-2.09$ $p< .04$).

Participants reported that they viewed the videos 1.9 times on average. The Indigenous family video that used the Australian Family Strengths Nursing Assessment Guide (Barnes & Rowe, 2013; McMurray & Clendon, 2015) was viewed most frequently, and was reported as the most useful by respondents. The data retrieved from the LMS platform, identified that Wednesday had the highest number of views [18% or 111/619 students]: this was prior to the tutorials for this course. Videos were most commonly viewed around midday; however student views were also recorded between 2:00am and 6:00am, highlighting the variability in the times students chose to watch the videos.

Qualitative comments noted that the videos were useful: *'I thoroughly enjoyed the videos and found them to be really helpful'* *'I found the video help with my understanding of family assessment models.'* The participants reported that videos were useful for future revision with over three quarters indicating they would use them again ($n=78$ [92%], mean response=4.86). Specific comments included requests for more prompts such as *'Reflection questions after each video would be useful'*, and feedback on the length of the videos stating *'They were useful, however should be shorter in length'*, suggesting that the videos were perceived to be too long for some participants. Access to the videos was reported as a problem for some participants, *'I could not access some of the videos due to problems with my blackboard'*, *'I would prefer we watch the videos in class'* highlighting the different participant views.

Discussion

Multiple diverse simulation family assessment videos were a component of a blended learning method of learning, which provided students best-practice exemplars of nurses with professional

actors participating in family assessment. The professionally developed and pedagogically grounded simulation videos were designed to provide a clearly visible link between the theoretical and clinical content within the course. The simulation videos positively contributed to the students' self-assessed knowledge of family assessment. The benefit of using professional actors was the ability to have predetermined exemplars of therapeutic communication, challenging family assessment situations and best-practice family assessment skills. The realistic nature of the scenarios depicting real-world situations were designed to enhance students' skill acquisition for clinical practice (Yeonja et al., 2015).

The use of simulation videos in a blended learning model enabled students to watch the simulation, reflect and engage with the teaching material. This is consistent with research that found similar improvements in clinical skill knowledge as a result of video resources (Ilott et al., 2014; Kelly et al., 2009; Wang, Liang, Blazeck, & Greene, 2015). The increase in student knowledge may have related to the fact that blended learning resources provide a context for theoretical understanding in combination with experiential learning (Clark, Stanforth, & Humphries, 2009; Massey et al., 2017; Pugsley & Clayton, 2003). Furthermore, students stated that the videos were useful tools for revision and viewing in their own time, thus highlighting the flexibility and longer-term significance of using on-line videos in nursing education (Massey et al., 2017).

The flexibility of viewing the videos was evident; students made use of the constant availability of the videos and viewed them all hours across the week and even between the hours of 2am and 6am. The importance of this flexibility should not be underestimated as today's students frequently need to be able to balance paid work, family and study commitments (Macaulay, 2013).

The student engagement with the simulation videos in this research appeared to be related the ease of viewing. The timing, ease of use and presentation of information for the students has been highlighted as principles to promote best practice in teaching (Brown, 2016; Johnston et al., 2017). Karoglu et al. (2014), suggest that online learning resources can increase learning outcomes and offer opportunities for students because they allow students to self-pace their learning in their preferred location (Ilott et al., 2014; Lehmann et al., 2015; Massey et al., 2017). Particularly, repeated watching of the videos enables students to connect to the teaching material in a meaningful manner (Massey et al., 2017).

Students in this cohort indicated that visual and interactive learning opportunities were their preferred learning styles, highlighting that simulation videos within a blended learning model should work to engage and meet students' learning needs. Students suggested that the videos contain reflective questions within the video. Within the developed videos reflective questions were placed towards the end of the videos rather than throughout the videos, which may have influenced the engagement. There is increasing recognition of the effectiveness of blended learning models in nursing education to provide opportunities for learning by watching and reflection (Guo, Kim, & Rubin, 2014). The use of pauses, embedded questions and student quizzes are suggested as best practice for blended learning (Karoglu et al., 2014) and these were included to prompt deeper learning by engaging students in activities embedded in theory (Baeten, Kyndt, Struyven, & Dochy, 2010).

The length of the videos is important as they need to provide enough information while encouraging students to watch the video in its entirety (McCutcheon et al., 2016). Previous researchers have highlighted that videos eight to ten minutes in length achieve higher levels of student engagement

(Forbes et al., 2016; Guo et al., 2014). Another point of consideration is that simulation videos require students to have access to high-speed internet connections to successfully utilise the educational resources. When using a blended learning model it is important to consider the student cohort and access to fast internet (Holland et al., 2013). The videos were presented in class and available for students to watch during their own time however student comments about access, identify the need to tailor the blended learning to the student group and check student access.

Furthermore, quality video development requires technical skills, resources and an adequate budget. The process of video development is time consuming and academic motivation is required for the initial development and ongoing maintenance of the interactive course material (Kaur, 2013). Ultimately, while the videos in this research demonstrated family assessment skills in a realistic setting, they did not substitute the importance of real life experience in a health care environment. The use of actors and scripts highlighted the fictitious reproduction of real world situations; yet do not replace the significance of practical experience in unpredictable, healthcare situations. Therefore, it is crucial that video-assisted learning is considered an enhancement of nursing education, rather than a replacement for clinical experience (MacLean et al., 2017).

Limitations

There are several limitations to this study. Firstly, participant response rate was low and potentially biased towards motivated students who attend tutorials and therefore available to complete the surveys. Similar studies have noted similar concerns with student responses (Hay et al., 2017; Massey et al., 2017). The video resource was just one way students learnt about family assessment and therefore the results of their knowledge may have increased from other educational opportunities during the semester.

Conclusion

The simulation videos within a blended learning model successfully increased nursing students' self-assessment of their knowledge of family assessment. The student preference for an interactive learning style supports the future development and enhancement of blended learning models as an effective educational method. The development of videos were found to enhance learning and engage students has provided justification for professionally designed real-life simulation videos to be developed for the blended learning environment.

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Table 1 Survey Items Time 2

Please indicate your level of agreement with each statement below (Please respond to each question by marking one box in the relevant column 1 = strongly disagree to 6 = strongly agree).

Item	Component	Question	1	2	3	4	5	6
1	Knowledge	I am knowledgeable about family theory to help understand family interaction						
2	Knowledge	I am knowledgeable about family assessment to help guide family support						
3	Knowledge	I am knowledgeable about different family assessment models						
4	Confidence	I have experience of using family assessment from my previous clinical placements						
5	Confidence	I feel confident to complete family assessment in the clinical area						
6	Engagement	I understand that communication with families is important						
7	Engagement	I respect different family types in my delivery of care as a nurse, and take this into consideration when implementing patient care						
8	Engagement	I value family engagement in my delivery of patient care						
9	Engagement	From personal experience I have a strong sense of the importance of family						
10	Preferences	I prefer to learn by watching an example						
11	Preferences	I prefer to learn by reading an example						
12	Preferences	I prefer to learn by interactive activities as an example						
13	Access	Did you find the family assessment videos useful to understand family engagement?						
14	Access	Did you find the family assessment videos useful to understand the assessments?						
15	Access	I found the videos easy to access						
16	Access	I like the fact that I can watch the videos in my own time						
17	Access	I would prefer if we watched the videos in class						
18	Access	I feel the videos motivated me to learn the skills						
19	Access	I set aside sufficient time to watch the videos						
20	Access	I feel I would use the videos to revise family assessment in the						

		future						
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ACCEPTED MANUSCRIPT

Table 2. Family assessment simulation video descriptions

	Video Description	Video Link	Video still
Nurse V (scenario depicting a family including a young baby)	Mary is a 17 year old, mother who presents to emergency with her partner James and 8 week old baby. The baby is unwell and the young couple share concerns of not coping with their unwell baby and lack of support.	https://www.youtube.com/watch?v=asY85vAoKd0
Nurse VF (scenario depicting a family in crisis)	Amy Parker is a 14- year old girl who lives in a blended family and shares struggles of understanding where she fits within the family during her school nurse visit.	https://www.youtube.com/watch?v=1om1XUaqoy4
Nurse E (scenario depicting a family dealing with life threatening illness)	Helena is a 42-year old woman diagnosed with breast cancer who lives in rural Queensland with her husband Stephan and three teenage children. Stephan works away and they struggle with her treatment and her need to be closer to hospital. They share family concerns with coping and maintaining support for the children.	https://www.youtube.com/watch?v=LDI0FRbiAzc
Nurse E (scenario depicting an Australian indigenous family)	Jacinta Wungalu is a 22- year old pregnant Indigenous Australian woman who has moved from a rural town to live with her mother and siblings to be closer to the hospital and to receive family support and pregnancy help. She has left her husband at home and she discusses mistrusting the hospital system as well as the importance of family support.	https://www.youtube.com/watch?v=O-CErXLmw1c

Table 3. Participant demographic characteristics at Time 1 and Time 2

Characteristic	Time 1 N=163	Time 2 N=91
	Mean (SD)	Mean (SD)
Age in years	25.0 (8)	25.0 (8)
Gender	N (%)	N (%)
Female	136 (83)	82 (90)
Male	27 (17)	9 (10)
Enrolment		
Domestic	144 (88)	80 (88)
International	17 (10)	8 (9)
Missing	2 (2)	3 (3)
Enrolment status		
Full-time	142 (87)	84 (92)
Part-time	21 (13)	5 (5)
Missing		2 (3)
Viewed video resources		
Yes	N/A	69 (76)
No	N/A	20 (22)
Missing	N/A	2 (2)

Abbreviations: SD: Standard Deviation, N/A: Not applicable

Table 4. Summary of the mean item scores and across Time 1 to Time 2

Item	Component	Question	Time 1	Time 2	Significance
			N=163 Mean (SD)	N=91 Mean (SD)	
1	Knowledge	I am knowledgeable about family theory to help understand family interaction	4.13 (1.04)	4.74 (.89)	.001**
2	Knowledge	I am knowledgeable about family assessment to help guide family support	3.91 (1.02)	4.90 (.67)	.001**
3	Knowledge	I am knowledgeable about different family assessment models	3.56 (1.03)	4.76 (.75)	.001**
4	Confidence	I have experience of using family assessment from my previous clinical placements	3.35 (1.2)	4.09 (1.14)	.001**
5	Confidence	I feel confident to complete family assessment in the clinical area	3.55 (1.14)	4.44 (.85)	.001**
6	Engagement	I understand that communication with families is important	5.6 (.75)	5.58 (.64)	.585
7	Engagement	I respect different family types in my delivery of care as a nurse, and take this into consideration when implementing patient care	5.5 (.77)	5.58 (.58)	.568
8	Engagement	I value family engagement in my delivery of patient care	5.5 (.81)	5.49 (.62)	.413
9	Engagement	From personal experience I have a strong sense of the importance of family	5.46 (.98)	5.51 (.71)	.581
10	Preferences	I prefer to learn by watching an example	5.29 (1.03)	5.43 (.77)	.607
11	Preferences	I prefer to learn by reading an example	4.12 (1.37)	4.20 (1.06)	.972
12	Preferences	I prefer to learn by interactive activities as an example	5.12 (1.15)	5.49 (.66)	.025*
13	Access	Did you find the family assessment videos useful to understand family engagement?		5.01 (.87)	
14	Access	Did you find the family assessment videos useful to understand the assessments?		4.96 (.96)	
15	Access	I found the videos easy to access		5.04 (.86)	
16	Access	I like the fact that I can watch the videos in my own time		5.18 (.98)	
17	Access	I would prefer if we watched the videos in class		4.74 (1.1)	
18	Access	I feel the videos motivated me to learn the skills		4.69 (.88)	
19	Access	I set aside sufficient time to watch the videos		4.09 (1.23)	
20	Access	I feel I would use the videos to revise family assessment in the future		4.86 (.96)	

**p<.001 *p<.05

Likert scale 6 points Abbreviations: SD: Standard Deviation

Research Highlights

- Simulated patient interaction provides opportunities for students to learn clinical skills
- Simulation videos enhance student engagement and learning
- Blended learning resources promote flexible student learning
- Students prefer interactive learning materials which they can engage with at home and repeatedly
- Simulated video resources should be about eight to ten minutes long to support completion of resource and to promote student engagement.

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Simulation videos presented in a blended learning platform to improve Australian nursing students' knowledge of family assessment

Elisabeth Coyne, Valda Frommolt, Hazel Rands, Victoria Kain, Marion Mitchell

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