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Exploring how undergraduate BSc (Hons) nursing (child) students learn about end of life care through simulation – A descriptive case study

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Abstract

Research suggests that nursing students have many anxieties about dealing with death and dying and feel unprepared to care for these patients as newly registered nurses. Effective education has been found to be an important factor in preparing nursing students for end of life care. Simulation is a pedagogical strategy widely used within nursing education and can provide an opportunity for students to develop their end of life care skills in the absence of opportunities in the practice setting. The purpose of this qualitative study was to explore how BSc (Hons) Nursing (Child) students learn about end of life care through simulation. A new simulation pedagogy was designed and delivered to eight second year child nursing students, and case study methodology was used to explore student learning. Data was collected through a focus group discussion and individual interviews and was analysed through the process of thematic analysis. The findings revealed that during simulation, students learned about end of life care through a combination of hands-on practice and reflection, collaborating with their peers and facilitators, and by engaging in the experience through the provision of a safe and authentic environment. Learning theory was applied to the findings in order to explain the simulation learning process. In conclusion, learning through simulation is socially constructed, occurring through experiential learning which promotes perspective transformation. Student engagement in the simulation learning process is influenced by effective and supportive facilitation.

Keywords: ***child; 'end of life care'; healthcare simulation; nursing***

Introduction

Nursing courses in the UK have to adhere to the quality assurance standards of proficiency from the Nursing and Midwifery Council (NMC), and education providers are required to design their curricular

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around these proficiencies (NMC, 2018a). Specific proficiencies related to end of life care state that registered nurses must be able to "identify and assess the needs of people and families for care at the end of life, including requirements for palliative care and decision making related to their treatment and care preferences" (NMC, 2018a, p.15). Education providers and clinical practice partners are required to assess student competency against these proficiencies to ensure their practice is safe and effective.

However, nursing students can often have many anxieties about dealing with death and dying and feel unprepared to care for these patients as newly registered nurses (Gillan et al., 2014). This has been found to have a direct correlation with poor quality of care (Sherlin & Quinn, 2016). Gaining confidence and competence in end of life care can be especially problematic for children's nursing students due to the relatively low numbers of children requiring this care and therefore limited opportunities within clinical practice placements (Together for Short Lives (TfSL), 2017). Effective education can help to bridge this gap in practice and has been found to be an important factor in preparing nursing students for end of life care (Gillan et al., 2014). Whilst theoretical teaching in end of life care is usually provided within nursing education programmes, it has been suggested that undergraduate end of life care education is often inadequate, with a recent survey finding over a quarter of UK universities do not provide end of life care education for undergraduate children's nursing students (TfSL, 2017). Traditional end of life care teaching is usually classroom based, providing students with little opportunity to rehearse and prepare for the clinical situations they may encounter, or reflect on difficult emotions that may be experienced when caring for the dying patient (Kirkpatrick et al., 2017). Therefore, innovative teaching methods are required to provide 'real life' learning experiences to better equip children's nursing students to care for children at the end of their life.

Simulation is a valued teaching and learning strategy recommended by the NMC (2018b) and is frequently used to support the development of competency in healthcare education. It has been shown to be effective in providing high quality end of life care learning experiences for undergraduate nursing students (World Health Organisation (WHO), 2018). As a teaching method, simulation has grown in popularity in recent years as a result of increasing student numbers and a shortage of clinical learning environments (McNamara, 2015). Methods of simulation span a wide spectrum of activities including simple role play and case studies, as well as more complex computer simulations and interactive mid to high fidelity mannequins (Jeffries, 2005). It enables students to apply theory to practice in an environment reflecting real life, without exposing patients to risk (Martins et al., 2014).

From a theoretical perspective, learning through simulation is a constructive process whereby students construct knowledge based on real life scenarios, reflection, and the integration of prior knowledge (Jonassen 1994). *Social* constructivism applies to simulation as learning occurs through interaction and collaboration with peers and facilitators (Cato, 2013). Further theories that provide support to simulation based learning include; Kolb's (1984) experiential learning theory, Vygotsky's (1978) social constructivist theory, Mezirow's (1991) transformational learning theory and Bandura's social cognitive theory (Bandura 1986). However, the majority of literature available discusses simulation as a teaching strategy (Kaakinen & Arwood, 2009), and there is little evidence of learning theory in the design of simulation in the nursing education literature (Lavoie et al., 2018).

End of life care simulation

Literature suggests that end of life care simulation has positive benefits. Fabro et al., (2014) and Tamaki et al., (2019), report that nursing students gained knowledge and skills in the components of a good death, principles of palliative care, spiritual care and communication. Further studies demonstrate knowledge acquisition in symptom management, emotional care and communication skills (Cole & Fioto, 2019), and professionalism, teamwork and spiritual care (Lindemulder et al., 2018). Kirkpatrick et al., (2017) found that knowledge increased regardless of students' previous experiences of providing end of life care. Further benefits include an increase in confidence and feeling better prepared for clinical practice (Fabro et al., 2014; Kunkel et al., 2016; Tamaki et al., 2019). Rehearsing sensitive situations through simulation allows students to explore their anxieties related to death and dying and develop coping strategies for managing similar situations in clinical practice (Cole & Foito, 2019). However, there is often an emotional impact involved (Allen, 2018; Kunkel et al., 2016; Sherlin & Quinn, 2016). Simulation

activities have been found to increase psychological stress levels for students (Allen, 2018) and trigger strong emotional responses based on previous experiences of death, and religious and cultural beliefs (Kunkel et al., 2016; Sherlin & Quinn, 2016). Although simulation experiences are not real, students often feel real emotions and use words such as 'sad' and 'scary' to describe their experiences (Fabro et al., 2014). Debriefing and 'degriefing' following the activity can help students to explore difficult feelings and emotions (Hamilton, 2010) and psychological safety can be enhanced with the provision of ongoing support following the session (Kunkel et al., 2016).

Literature exploring children's end of life care simulation is limited. A large US study (Cole & Foito 2019) explored 149 children's nursing students' experience of an end of life care simulation scenario of a child death in a hospital setting. Via a post simulation written survey, participants reported that the simulation helped them to develop their communication and symptom management skills and provide emotional comfort and family support. Participants appreciated the opportunity to explore difficult emotions during the debrief such as sadness and grief and their role as a nurse and emotional caregiver.

As an alternative to standard end of life care simulation, more novel approaches to student centred learning have been described in the literature. Gotwals and Scholtz (2016) report on the effectiveness of video simulation in supporting student reflection on children's end of life care, recognition of the stress and emotions involved and feeling better prepared for clinical practice. Additionally, Neilson and Reeves (2019) developed a peer-led theatre workshop to teach communication skills in paediatric palliative care to first year student nurses from all fields of nursing. They report that 96% of respondents said that the workshop would help them become a more effective communicator, although several students were concerned about the emotive subject area, and a small number of students felt awkward participating in the workshop. However, this could be attributed to the novice learner status of the students, and overall, the authors concluded that exposure to different learning approaches provided opportunities for nursing students to gain confidence and develop knowledge and skills in communication. Further approaches described in the literature include using standardized patients to portray parents in paediatric end of life simulation (Aldridge, 2017; Kenny et al., 2016) and delivering the simulation as an interprofessional learning intervention with medical, pharmacy, public health and nursing student colleagues (Stout-Aguilar et al., 2018).

Exploring the literature revealed that the majority of studies involve emergency simulation scenarios in acute settings. One study (Kenny et al., 2016) investigated a paediatric community based scenario which took place in a converted house owned by the simulation department. Students reported an enhanced sense of realism in the simulation environment and that they really believed they were in the young person's bedroom. Community based simulation in paediatric nursing programmes has been suggested as an effective teaching strategy (Villora, 2013).

Simulation is a commonly used and accepted pedagogy for clinical skills teaching; however the current literature primarily focusses on the technological aspects of simulation with little focus on the theoretical basis of simulation as a learning pedagogy. The following research question aimed to address these gaps by evaluating a new pedagogic design of paediatric end of life care simulation, the findings of which could help shape future end of life care education:

How do undergraduate BSc (Hons) Nursing (Child) students learn about end of life care through simulation?

Methods

Descriptive case study methodology was used to gain an in-depth understanding of the elements that constitute the simulation learning experience (Yin, 2018). Ethical approval was obtained from the University Research Ethics Committee (Ref no: 2019-2640). As this study sought to explore the in-depth experiences of the participants, a purposive sampling strategy was used (LoBiondo Wood & Haber, 2014). Participants were selected purposefully based on their ability to meet the inclusion criteria (Table 1), with an awareness that this type of sampling would reduce the generalisability of the findings (Green & Thorogood, 2018).

Table 1:

Participant inclusion and exclusion criteria

Inclusion	Exclusion
Year 2 second trimester undergraduate children's nursing students currently enrolled on the BSc (Hons) Nursing course at the University	Year 1 children's nursing students
Previous experience of simulation in the community simulation flat	Year 2 first trimester children's nursing students
Undertaken pre-session reading related to children's end of life care	Year 3 children's nursing students
	All adult and mental health nursing students

All BSc (Hons) Nursing child field students in the second trimester of Year 2 (N=20 female students) were invited to participate in the study which included a two hour simulation session followed by a focus group discussion. Those who chose not to participate were offered the opportunity to receive the simulation activity at a later date. Written participant information sheets and consent forms were provided during a verbal presentation delivered by an independent collaborator. The completed consent forms were followed up by the researcher via email and the first eight students to respond were recruited to the study. The small sample size was determined by the research methodology and method of data collection, with Braun and Clarke (2013) suggesting that between three and eight participants in a focus group is optimal for generating rich discussion.

An end of life care simulation session was designed and delivered with the aim of enabling students to develop knowledge and skills in the provision of high quality end of life care for children and families in the community setting. The session and simulation scenario was developed to meet learning outcomes based on the Royal College of Nursing (RCN) Competencies: Caring for Infants, Children and Young People Requiring Palliative Care (RCN, 2018) (Table 2). Development of the session was further guided by the World Health Organisation (2018) framework for designing, implementing and evaluating simulations in nursing, and the International Nursing Association for Clinical Simulation and Learning (INACSL) Standards of Best Practice (INACSL Standards Committee, 2016).

Table 2:

Learning outcomes

Learning outcomes:

- To undertake a holistic assessment of the needs and wishes of a child and family at the end of life.
- To identify nursing care interventions to promote comfort and improve quality of life.
- To demonstrate effective communication skills when caring for a child and family at the end of life.
- To demonstrate insight into the role of the multidisciplinary team in the provision of end of life care for children and families.

During the two-hour session the eight students participated in two end of life care scenarios (Table 3). Students rotated between roles, with six students volunteering for active roles as the child's mother or nurse, and five students observing each scenario. A pre session reading activity was provided for participants and the session began with a pre-briefing discussion in order to set the scene, and ensure the participants were familiar with the environment and understood the scenarios. The session ended with a debrief to support learning through reflection. Recognising the emotive nature of the simulation topic, a colleague was present throughout the session to provide emotional support for the students as required.

Table 3:

End of life care simulation scenarios

Scenario 1: Jacob aged 10 years old was diagnosed with osteosarcoma in his right leg 18 months ago. Following an initial good response to surgery and intensive chemotherapy he has now relapsed with disease progression in his bones and lungs. His condition has rapidly deteriorated and he has been discharged home for end of life care. He lives at home with both parents Michelle and Dave and his brother Ethan aged 7 who has been recently diagnosed with type 1 diabetes. The family are Christians and attend church weekly. Before his diagnosis, Jacob was a keen footballer and played for his local team. He also enjoys gaming on his Xbox and is a big Harry Potter fan. He is concerned that he is not getting better and worried about his parents as they seem upset a lot of the time. His mother Michelle has telephoned the community children's nursing team requesting a home visit to review Jacob as she is concerned about his increasing leg pain and breathlessness. **Scenario 2:** Mother: Michelle works part time in the local school as a lunchtime supervisor. She is married to Dave who is a bus driver. Michelle is very tired and emotional. She has taken time off work but is finding it increasingly difficult to manage both Jacob and Ethan's ongoing care needs. She is very worried about the future and what to expect when Jacob dies. She is unsure about how much Jacob understands about his illness. She is also worried about Ethan as he has not been wanting to go to school and his diabetes control is poor. Dave is unsupportive and angry about Jacob's prognosis. He wants Jacob to return to hospital to receive further active treatment and feels that health professionals have "given up on him". Michelle requests to talk to the nurses privately about her concerns.

Data was collected via a one-hour long focus group for all participants, which took place after a short break following the simulation session. The discussion generally remained open-ended and assumed a conversational style in order to facilitate a natural commentary (Yin, 2018). Acknowledging the importance of triangulation in case study methodology (Yin, 2018), participants were also invited by email to attend a thirty minute individual semi-structured interview two weeks after the simulation activity. The interviews gave participants the opportunity to express more personal views of the learning activity that they may not have felt comfortable sharing in the focus group (King et al., 2019). It also served to improve rigour of interpretation (Gray, 2014). The first three participants who responded to the email were interviewed. Each interview commenced with an open-ended question allowing the participant to share their experience within the boundaries of the research question (Table 2).

Table 4:

Interview schedule

Initial interview question: • Can you describe your experience of the end of life care simulation activity in relation to your learning?
Follow up questions if required: **What?** • What have you learned during the simulation activity? • What has been the impact of simulation on your learning? • What role, if any, do you think simulation has in relation to your learning? • What factors do you think have influenced your learning? • What aspects of the simulation activity in particular impacted on your learning?

How?

- How has simulation supported your learning?
- How useful was the simulation in relation to your learning?
- How will this learning impact on your future nursing practice?

Data from the focus group was analysed separately from the interview data, with themes from the focus group data being used to influence the questions used in the individual interviews. The interview data was used to validate the themes from the focus group. The coding of data and identification of themes and sub themes was carried out using Braun and Clarke's (2006) thematic analysis framework (Table 5). Nine sub themes were identified by grouping pattern codes into central organising concepts which contained different but related topics. The final themes were developed by further analysing and clustering these nine subthemes into three main themes with an over-arching meaning related to the research question; 1. practical experience and reflection, 2. collaborating with others and 3. engaging in a safe and authentic environment (Table 3).

Table 5:

Theme generation

Data extract example	*"sometimes you actually have to do stuff to be able to learn it…..it helped me be involved in the situation a bit more" (Julia)* *"you all raised points or I've said something and you've counteracted that and actually now I can see it from a different point of view that I wouldn't have thought of before" (Caroline)*	"*it highlighted the importance of multidisciplinary working and working as a team, even though you're working on your own sometimes you're never really on your own….you work as a team, like you can't do this all on your own, you need to be in contact with other people, and it's kinda highlighted you are part of a team…." (Jo)*	*"felt slightly nervous about acting as a nurse and we were quite unsure as to how to do it" (Molly)* *"being in a flat with things around you that look like actual resources…things that will be there…it does make it more real……" (Jo)*
Pattern code example	Learning by doing Practising skills Seeing things differently Reflection	Learning from each other Learning with each other	Anxiety Realism Comfort
Subthemes	Experience Reflection New knowledge Impact on future practice	Learning together Teamwork	Psychological safety Authentic environment Preparation
Main Themes	Practical experience and reflection	Collaborating with others	Engaging in a safe and authentic environment

Findings

Practical experience and reflection

Codes linked to the students' practical experience of the simulation activity included 'learning by doing', 'making mistakes' and 'prior knowledge and experience'. Due to the relatively small numbers of children requiring end of life care, most students had not had an opportunity to be involved in this area of practice

during their placements. For this reason, students valued the simulation as an opportunity to experience an end of life care scenario and practise their skills in a safe environment.

During the scenario students were able to physically connect with the resources such as medication equipment and care planning documentation, and several students expressed their preference for learning in this way. One student said "I really like the tactileness of simulation, having the equipment there and being able to see it and use it" (Olivia) and another commented "sometimes you actually have to do stuff to be able to learn it…it helped me be involved in the situation a bit more." (Jo) The practical simulation experience also allowed enabled students to learn by 'trial and error' which was seen as beneficial. This is relevant in the context of a student who stated that "it helps to do things wrong to learn that you're doing things wrong." (Caroline) This comment suggests that practising and rehearsing skills without a fear of making mistakes is a valuable part of the experiential learning process.

Data from the study identified that reflection was important in order to construct meaning from the simulation experience, and this was a strong theme to emerge. In line with best practice, the opportunity for reflection and feedback was provided during a debrief session immediately following the simulation experience. The debrief activity included feedback from observers and facilitators which supported students to make connections between the experience and knowledge drawn from the experience;

> "it was good that we had the debrief afterwards, which you would do in real life, you'd reflect, and I think it's a process of trial and error, learning and saying 'well...I said that but maybe I wouldn't say that again." (Molly)

Reflection and feedback helped students to develop their critical thinking skills and integrate theory and practice by allowing them to reflect on their decisions, skills and communication. Through reflection, students made sense of the experience, conceptualised it and incorporated it into their existing cognitive structure. Linking the simulation experience to real life practice through reflection, enriched the experiential learning process.

Collaborating with others

This theme was developed by grouping together the two subthemes 'learning together' and 'teamwork'. Collaboration with others emerged as a powerful aspect of the simulation with many students expressing their views on the value of working and reflecting with their peers, observing each other and having the opportunity to give and receive feedback. During the simulation activity students participated as both role players and observers, working together in the role of the patient's mother or nurse, and learning together through observation, feedback and reflection. Students reported that learning with and reflecting with their peers and facilitators during the simulation was effective in promoting their learning and they valued the opportunity to create collaborative social meanings. This is summarised in the following quotes;

> "bouncing off each other's ideas, bouncing off the lecturer's ideas as well and just having it all in such a small intimate group I think is really beneficial and sort of paramount to feeling prepared to go out into the world of practice." (Olivia)

> "you all raised points or I've said something and you've counteracted that and actually now I can see it from a different point of view that I wouldn't have thought of before." (Jane)

Whilst some students took on the role of the nurse or the patient's mother, making decisions and directly providing care together, other students chose to take on the role of observer during the simulation activity. This involved watching the scenario unfold from an audio-visual room, but not directly providing care for the patient. Students in an observer role reported their learning to be equal to that of students in an active role, with the observing students finding it useful to step back and think about what they would have done in the scenario. Two students reflected on this, with one stating:

> "watching other people do it, means you think… ah in that situation maybe I'd have said it like that but then you also think oh actually that's a really good idea, like in future I would've done

> what they did, so you're drawing on what other people are doing well…. as well as maybe…….thinking about what you'd do in that situation as well." (Julia)

The observers reported that they learnt about what to do in an end of life care situation in real-life clinical practice through watching their peers and rehearsing the scenario in their mind. This suggests that rather than passively watching the scenario play out, the role of the observer actually involved active learning, reflection and critical thinking, and this could be viewed as vicarious experiential learning. Rather than physical participation, learning was reinforced through watching others acting out the roles.

Engaging in a safe and authentic environment

This theme emerged by clustering the subthemes 'psychological safety', 'authentic environment' and 'preparation', which can be understood as factors that contribute to student engagement in learning. Data from this study found that the psychological safety of the learning environment had an effect on learner engagement. An increase in anxiety was a strong theme described by the students, with two main areas of concern to emerge. Firstly, students expressed concern about feeling adequately prepared prior to commencing the simulation experience. This was captured in the following two quotes. Julia noted "all of us had that little bit of nervousness, thinking oh god I'm not prepared for this at all." and Anna said "I didn't know if I had the knowledge or skills to know what to do clinically in that exact situation."

A second cause for concern for students was anxiety about their performance during the simulation. Several students reported high levels of anxiety concerned with role play during the simulation, with one student stating "I hate doing simulations, I hate putting my hand up to actually do the acting 'cause I think I get really awkward and nervous." (Caroline)

This was a strong emotional reaction to the simulation activity and this comment demonstrates the level of discomfort experienced by the student. Performance anxiety about the simulation was a common theme discussed by students. Although most students felt comfortable learning with their peers in a small group, performing in a role and being observed led to embarrassment and a fear of being judged as less confident students.

Factors which students found helpful in reducing their anxiety levels included adequate preparation for the simulation and support from peers and facilitators. One student commented on the support provided by facilitators; "I know that if I say something wrong you'll guide me in the way that I'd find supportive in terms of what I should have said or maybe what someone should do in that situation." (Olivia)

Students described facilitators as 'gentle' and 'knowledgeable' and good role models in managing the emotional impact of caring for children at the end of their life. Furthermore, students believed that the facilitators played a key role in promoting their psychological safety where they could make mistakes and learn from them.

In addition to psychological safety, simulation in a comfortable and authentic environment was found to be integral to student engagement and learning. The simulation activity took place in a community simulation flat which students agreed helped them to feel more relaxed due to the homely informal environment and not needing to wear uniform. The community flat was laid out as a patient's home with a kitchen, lounge and bedroom. The environment contained props such as furniture, soft furnishings, toys and books. An oxygen mask, medication bottle, nursing charts and a care plan were also available. In addition to feeling relaxed and comfortable in the environment, several students commented on the realistic nature of the simulation flat and how this impacted on their learning and future practice. One said that "it made it more realistic and easier to picture me actually being in the scenario in the future" (Molly), while another student commented that it was "really helpful to put it into perspective of what it actually feels like just being in someone's home." (Jo)

Although the simulation environment was authentic, the patient in the scenario was represented by a low fidelity child sized mannequin which was not technologically sophisticated enough to interact with the students. Several students reported that this lack of interaction inhibited their learning and they felt

awkward and confused. One student stated that "the whole dummy thing is kind of weird and confuses the situation because you don't get the natural feedback." (Jane)

A low fidelity mannequin will never be a realistic replacement for a real child in terms of behaviour in a healthcare setting. Students in this study reported that greater realism and interaction could have been achieved by using a student acting in the role of the child instead of using a mannequin.

Discussion

This study aimed to explore how students learn about end of life care through simulation. Learning theory was applied to the findings to explain the learning process and factors that influenced learning. The theme of 'practical experience and reflection' can be understood using Kolb's (1984) experiential learning theory, in which learners construct their understanding of the world through interaction with it, by means of a process of assimilation and accommodation (Hellaby, 2013). Experiential learning enables students to learn through practical hands-on experience and reflection (Fry et al., 2015). Kolb's (1984) theory was developed from Dewey's (1963) beliefs that 'experience plus reflection equals learning'. According to Kolb (1984), learning is a continuous process and knowledge is generated by transforming experience through reflection. This learning cycle begins with a concrete experience, and continues through a process of reflective observation, abstract conceptualisation and active experimentation (Kolb, 1984).

As simulation is dependent on the combination of experience and reflection (Decker et al., 2013) the pedagogy aligns well with Kolb's theory and is one of the most prevalent learning theories in simulation literature (Lavoie et al., 2018). Learning through experience is central in preparing nursing students for professional practice (Poore et al., 2014), and most frequently occurs during clinical placements. In the absence of opportunities for real life practice such as children's end of life care, simulation can offer a viable alternative for students to gain knowledge and skills through experiential learning.

As a constructivist model the focus of Kolb's theory is on how the individual learner constructs knowledge based on prior experience (Rutherford-Hemming, 2012). However, a key finding in this study was the impact of students 'learning together' during the simulation, which is more reflective of social constructivist theory. This was evident during the physical aspect of the simulation activity where students worked together as a team, communicating and interacting with each other, sharing decision making, and planning and performing end of life nursing care. Students were engaged in dialogue, collaborating and cooperating with their peers and facilitators. Learning together in this way supported students to develop a range of skills required to function in the workplace such as communication, teamwork, human interaction and interprofessional working. This is an important part of socialising students into the nursing profession (Parker & Myrick, 2010) where healthcare professionals are required to work collaboratively together (Poore et al., 2014).

Social constructivism was also evident in students comments on the benefits of reflecting together, and giving and receiving feedback during the debrief part of the session. The role of debriefing has frequently been cited in the literature as the most significant pedagogical aspect of simulation in promoting student learning and altering meaning schemes (Parker & Myrick, 2010). Following the debrief, students described 'seeing things differently' and 'doing things differently' which suggests that by engaging in critical reflection through social discourse students were empowered to challenge their pre-existing beliefs, assumptions and values, thereby disorientating their habits of mind (Mezirow, 1991). Mezirow (1991) describes this as perspective transformation and argues that this is a social process which involves connecting with others who are having similar transformative experiences.

Data from the study suggests that in addition to peer support in learning, students found facilitators helpful in guiding them through the simulation and engaging them in critical reflection during the debrief session. Explicit guidance and assistance from facilitators was continually provided during the simulation through pre-session preparation activities, pre-briefing and debriefing. This enabled students to gradually expand and develop their concepts and skills moving towards new knowledge and skills. This can be understood through Vygotsky's (1978) social constructivist theory which addresses the importance of the facilitator in learning through simulation. Vygotsky describes the 'zone of proximal development' (ZPD)

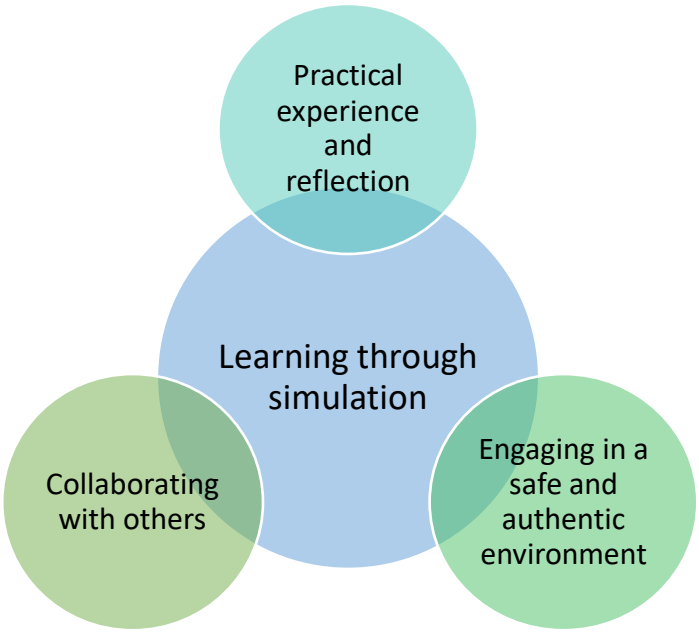
as the point between a learner performing a task with the assistance of a 'more knowledgeable other' (MKO) and being able to perform it independently. When a learner is at the ZPD for a particular task, Vygotsky believed it can be achieved by providing the necessary assistance (Cato, 2013). A competent facilitator can maximise learning opportunities by facilitating learning in a safe environment with knowledge and professional values (Decker et al., 2013). In their study, Walton et al., (2011), found that students felt 'like an imposter' during simulation activities and suggested that positive feedback, reassurance and support from facilitators can help students to move through this phase. Further studies highlight the importance of facilitator skills as being critical for productive reflective discussions (Fey et al., 2014) and applying clinical judgement *(*Kelly et al., 2014). However, Fey & Jenkins (2015) argue that most facilitators have not received simulation training and may not have the required skills to feel confident and competent.

In addition to promoting a safe and supportive environment, Jeffries (2005) suggests that methods to facilitate engagement in simulation should include the realistic replication of the environment. The concept of authenticity or realism in simulation is complex, difficult to define and frequently contested (Nestel et al., 2018). Data from this study found that students perceived the environment to be authentic, although engaging with the low fidelity mannequin was problematic. Pike & O'Donnell (2010) suggest that the simulated experience must reflect the contextual realities of clinical practice for transfer of learning to occur. However, Dieckmann et al., (2007) argue that greater realism does not always help to achieve better educational outcomes. Rather, they suggest that the value of simulation lies in 'social practice' defined as "an event in which people interact with each other, with technology and with the environment" (Dieckmann et al., 2007, p.183). In order to benefit from social learning, students need to accept that the simulation experience may lack some aspects of a real clinical situation (Dieckmann et al., 2007). Moreover, the relationship between simulation fidelity and learning outcomes remains open for debate (Stokes-Parish et al., 2018) and it has been suggested that low fidelity simulation is just as effective but without the technological and cost limitations (Grober et al., 2004).

Analysis of the data in conjunction with the literature reveals that there are several factors that are required for students to learn about end of life care through simulation. Figure 1 depicts a conceptual model of how each of the main themes contributed to student learning. Each concept was equally strong in the data and they were all found to be interrelated and dependant on each other. Engaging in a safe and authentic environment enabled students to actively participate in the simulation experience, collaborating with and learning from each other. Learning in a small group of trusted peers helped students to feel safe and supported to engage in the simulation activity and to give and receive feedback during the debrief session. Equally, the experiential nature of the simulation promoted engagement by giving students the opportunity to practise their skills in an environment and scenario which closely resembled real life clinical practice.

Figure 1:

Learning through simulation



Limitations

This study has several limitations. Firstly, it is acknowledged that the researcher's role as a faculty member at the university had the potential to create social desirability bias whereby students could be influenced in their decision to take part, and create a positive impression with their views during data collection. The Hawthorne effect may also have influenced behaviour and affected the results. Secondly, the small number of participants representing the experience of one cohort of students from one university, limits the transferability of the findings. Furthermore, the participants were volunteers and chose to engage with the simulation activity, suggesting they were highly motivated or interested in end of life care. Choosing the first students to respond during recruitment to the study, may also bias the results and therefore the findings may not be generalisable. Future research regarding end of life care simulation in other universities is required to understand whether these results reflect the views of a wider range of child nursing students.

Conclusion

In the absence of opportunities for real life practice in children's end of life care, simulation can offer a viable alternative for students to gain knowledge and skills through experiential learning. Simulation experiences should be designed and implemented following best practice standards and evidence-based learning theories in order to ensure effectiveness and achievement of student learning outcomes. For learning to occur students need to feel prepared, safe and supported within a comfortable and authentic simulation environment. Facilitators therefore require competence and confidence to design and implement effective simulation activities and engage students in learning.

The results of the study revealed that learning through simulation is socially constructed, occurring through experiential learning which promotes perspective transformation. Student engagement in the simulation learning process is influenced by effective and supportive facilitation. Further studies should focus on the theoretical basis for end of life care simulation, and further explore the effectiveness of low fidelity paediatric simulation in non-acute settings.

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