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The Development of a Simulation Placement in a Pre-Registration Nursing Programme

Abstract

Background: A four week simulation placement using an innovative blended approach was developed and delivered, which has been the first tariffed simulation placement in the UK for student nurses.

Aims: To describe how this flexible simulation placement was developed, operationalised and adapted due to COVID 19. Whilst exploring the student nurses' experiences and preparedness for practice.

Methods: An anonymous online survey was undertaken and a placement evaluation was completed and compared to traditional clinical placement evaluations for previous students at the same point in their studies.

Results: Students were comparably satisfied with the simulation placement when compared to real practice placements. 92% students were satisfied with their simulated placement experience and 92% felt prepared for practice.

Conclusion: This simulated placement has been an acceptable replacement to real practice placements.

Introduction

There has been increased interest in developing simulation for student nurses to replace clinical hours.(Meyer et al., 2011; Watson et al., 2012; Au et al., 2016; Brien, Charette and Goudreau, 2017; Soccio, 2017).This has largely been driven by a lack of placements in the UK. Studies have shown similar or in some cases superior outcomes in student confidence, skills and knowledge (Larue, Pepin and Allard, 2015; Curl et al., 2016; Brien, Charette and Goudreau, 2017; Soccio, 2017; Hewat et al., 2020). The literature appears mostly in favour of replacing a percentage of traditional clinical hours with simulation (Williams, French and Brown, 2009; Watson et al., 2012; Roberts, Kaak and Rolley, 2019; Wands, Geller and Hallman, 2020). However, the majority of these studies have used one method of simulation delivery - high fidelity, which is resource intensive and therefore can be challenging to deliver to large cohorts of students. Interestingly, there is little evidence of the effectiveness of using blended simulation methods to replace clinical hours or exploration of the impact on the student learning and experience if simulation was to replace a whole clinical placement.

Revalidation by the Nursing and Midwifery Council (NMC) of a pre-registration nursing programme presented the opportunity to develop and replace a four week clinical placement for first year paediatric, mental health and adult nursing students with a simulation placement. This would utilise a combination of novel blended methods, encompassing both face to face teaching and e-simulation, to create a unique, immersive interactive experience.

This paper describes how this simulation placement was developed, operationalised and adapted due to COVID 19. Exploring the student nurses' experiences and preparedness for practice and comparison of evaluations with students who have had traditional clinical placements in previous cohorts at the same point in their studies.

Background

The growth of simulation in nursing curriculums has been influenced by increased student nurse numbers and decreased clinical placements (Cobbett and Snelgrove-Clarke, 2016).

The resources required and how quality of simulation was maintained will be discussed.

The development of this four week simulation placement (120 hours block) was undertaken as simulation based education (SBE). Simulation based education has become integral to nursing education (INACSL, 2017), particularly as studies have shown that students can develop confidence, critical thinking, clinical reasoning, technical and non-technical skills (George and Quatrara, 2018; Morrell-Scott, 2018; Peddle, 2019b; Raman et al., 2019; Teles et al., 2020).

As student nurse numbers continue to rise (NAO, 2020) and simulation can be resource intensive (Cant et al., 2019; Shin et al., 2019), there is a challenge for educators to ensure all students receive good quality effective simulation that meets learners needs.

In addition, within the UK student nurses have to undertake considerably more practice placement hours increasing pressure to find high quality placements compared to other countries, please see Table 1:

Table 1: International comparison of required Practice Hours

Country	Practice hours
UK (NMC)	2,300
New Zealand (NCNZ)	1,100
Australia (NMBA)	800
America (ANA)	Varies according to state, up to 868

Therefore, developing a 4 week simulated placement can help to reduce service based placement demand.

Berman et al (2016) proposed that in order to meet the challenges of delivering engaging and effective simulation in particular to large cohorts, web-based technology can complement and enhance the learning experience. Baxendale (2017) support this and suggests that there has been a significant rise in the use of technology, as developments have rapidly evolved. This modality has become more widely adopted by nurse educators over the last few years, in particular due to a massive surge of interest and usage due to COVID 19. Indeed, the accessibility of web based learning is creating a paradigm shift to online pedagogy (Peddle, 2019a; Lu, 2020). Therefore, the development team aimed to use appropriate and innovative technology with innovative, immersive e-simulation.

Aliakbari et al. (2015) suggest that without underpinning theory, knowledge is not used effectively, and structure and context is lost. Theory can be seen as a framework of ideas which illuminates simulation based educational practice (Nestel and Bearman, 2015). Therefore Kolb's experiential learning cycle has been used in the design of this simulation placement which is a theory that has been widely utilised within health care simulation (Kolb,

2007). Kolb's work complements and enhances SBE and gives structure and meaning to its design and delivery. Indeed, experiential learning is crucial in preparing health professionals for practice. Kolb's cycle fits with the stages of a well-designed simulation : pre brief, simulation, debrief, reflection (INACSL, 2017).

There was also consideration given to the flexibility of the design, as this simulation placement was developed as COVID 19 struck. As local and national lockdowns were imminent, the design needed to ensure that this could be flipped to be delivered face to face or remotely as required. This simulation placement is the first in the UK to be validated as a placement and tariffed by Health Education England.

Operationalisation

The primary aim of this simulation based placement was to re-create a standardised first year student nursing placement. Utilising simulation methods would also give opportunities for safe practice and rehearsal (Bliss and Aitken, 2018).

Learning aims and outcomes were sub divided into technical skills such as injection techniques and personal hygiene and non-technical skills for example leadership and followership. A clear focus was placed upon inter-professional working, a multi-disciplinary approach to care delivery, Team Resource Management, Human Factors in healthcare and patient safety agenda; which met the student's stage of education and mapped with NMC standards (2018).

On a creative level, the ambition was to design immersive and interactive experiences which would maximise the potential of the existing delivery systems. These ambitions would be tempered by the restriction of physical capacity in the form of classroom space, the availability of faculty and the large number of students (400 per cohort). The solution to this

conundrum would lie in the application of a blended approach to delivery, utilising a combination of remote asynchronous online and face to face methods (Seah et al., 2021). The involvement of all nursing speciality educationalists in the design and delivery of the program aimed to ensure relevance to, and 'buy in' from a mixed field of practice foundation year student nurse cohort.

Approach utilised

To ensure relevance to practice all areas of delivery were mapped directly to the NMC nursing standards, Appendix A and B (NMC, 2018). This was clearly communicated to all faculty members involved in the delivery and the students themselves through the coding of each session. In addition, INASCL (2017) good practice guidelines were followed in the design and delivery.

A coding system for the various methodologies such as digital simulation (DS) and simulation laboratory (SL) was developed to describe the delivery of the programme. The combination of these systems assisted in developing clear mental modelling across the delivery faculty and played a vital role in the pre-brief phase for the students. The sharing of processes across the faculty during the developmental phase, also enhanced the potential for cross pollination of ideas and concepts. For example, the deployment of interactive service user interviews when exploring complex themes to encourage student empathy and understanding of individual experience originated in Adult and ultimately was adopted by all fields.

The sharing of processes was actively encouraged and maximised through the use of project management applications, leading to fertile spaces for discussion and dissemination of ideas. The positive outcomes to this approach included standardisation of content presentation,

accurate monitoring of development towards completion and an increase in motivation and creativity of the staff involved.

Wider themes

To create an immersive experience, a 'Simulated Hospital Trust' was developed with the premise that each day of activity would take place within this virtual hospital, in virtual clinical areas, with virtual patients and condition specific scenarios. It is important to note that the scenarios presented to the students were grounded in the real world, with all of the imperfections, challenges and issues therein. This allowed students to critique performance, make suggestions and build solutions and schema for potential improvement during each debrief and reflective phase.

Content and delivery became directly informed via a multi-disciplinary approach involving Adult, Learning Disability, Mental Health and Paediatric fields of nursing, as well as service user involvement. In addition to these specialities the Technology Enhanced Learning (TEL) team factored heavily throughout the design and delivery phases of the project. TEL involvement not only improved accessibility for students, but directly contributed to learning outcomes via a bespoke digital literacy session which focused upon Information Technology skills acquisition.

Due to the onset of COVID 19 during the design phase, limited access to faculty and the university could have caused this simulation placement to be significantly compromised. However, this huge challenge actively brought about a number of creative solutions, which built upon existing design concepts and ideas and would ultimately produce real innovation in the design and delivery of the program. The creative starting point for the project had always existed in a desire to create an immersive, interactive experience, which would explore

and potentially challenge the definition of Virtual Reality (Bucher, 2018). In order to achieve this, a narrative pedagogy was used (Wiederhold, 2018) to give meaning and add value to the content being delivered and overall user experience. The enforced move from 50% face to face and 50% remote simulation delivery, to only 5% face to face and 95% remote, placed additional pressure upon the ability to deliver this in any meaningful way, simply due to the high numbers of students in any given session. The solution was found by developing eight timetables with identical content which were delivered in a standardized format concurrently.

Guided by Kolb (1984) experiential theory of learning, student activities reflected what would be undertaken in real clinical placements. Allowing reflection, repeated practice and discussion, drawing on conclusions and exchange of ideas. These activities linked to the simulated narrative, examples such as completing observation charts whilst observing a scenario of a deteriorating patient and undertaking a handover at the end of their virtual shift. Attendance, was monitored to ensure verification of simulated placement hours attended by each student.

The content and activities developed in complexity over the days and weeks. The narrative worked on both micro and macro levels. From individual patient stories, to cohorts of patients within a ward and then to the wider organisation (simulated NHS trust). Student group immersion in the narratives facilitated a sense of belonging, According to Zhao et al. (2012) and Peacock et al. (2020) a sense of belonging is crucial within virtual communities, as this can enhance participation and engagement.

The use of team working, shifts, real world activity and workload management in combination with design elements added to the online platform such as corporate Trust identity and NHS signage aimed to build upon and add to the sense of immersion and community. Please see

table 2 below for an example of one simulation placement day, demonstrating underpinning theory and link to NMC (2018) annexes.

Table 2: Example of simulated placement day

SESSION	LENGTH (In Minutes)	DESCRIPTOR	DELIVERY METHOD	NMC ANNEXES	KLOBS CYCLE
INTRODUCTION AND ORIENTATION	20	At the start of every session the technical and non-technical learning goals and outcomes are clearly stated. This is followed by a pre-recorded presentation illustrating the underpinning pathophysiological theory.	PRE-RECORDED PRESENTATION		
SCENARIO CHAPTER 1	20	Pre-recorded clinical scenario. Scenarios Chapter 1 present real world clinical activity. Care is taken to present an honest accurate reflection of current challenges to practice. Student are invited to take notes upon their observations.	PRE-RECORDED VIDEO BASED SCENARIO	A2/A4/B1	Concrete Experience Reflective Observation
DEBRIEF 1	60	Student observations are invited with both technical and non-technical aspects of the scenario discussed. The performance of the clinical staff is critically analysed and improvements suggested.	LIVE VIDEO ASSISTED FACILITATOR LED DISCUSSION VIA ZOOM	A1/A2/A4/B1	Reflective Observation Abstract Conceptualisation
SCENARIO CHAPTER 2	20	Pre-recorded clinical scenario. Scenarios Chapter 2 depicts a continuation of Scenario 1 enabling exploration of some solutions to the questions raised in the previous chapter.	PRE-RECORDED VIDEO BASED SCENARIO	A1/A2/A4/B1	Concrete Experience Reflective Observation
DEBRIEF 2	60	Student observations are invited with both technical and non-technical aspects of the scenario discussed. The performance of the clinical staff is critically analysed and any improvements appraised.	LIVE VIDEO ASSISTED FACILITATOR LED DISCUSSION VIA ZOOM	A1/A2/A4/B1	Reflective Observation Abstract Conceptualisation
LUNCH BREAK	30				
SERVICE USER INTERVIEW	40	Student are invited to question a service user with a similar medical history to the area of focus for the day upon their experiences of health care services.	LIVE FACILITATOR HOSTED DISCUSSION VIA ZOOM	A1/A2/A4	Active Experimentation Abstract Conceptualisation
COMMUNICATION PREP	60	Student are invited to watch a presentation upon communication including SBAR model of information transfer. Using the SBAR model students must then build a written hand-over of the patient from Scenarios 1 and 2.	PRE-RECORDED PRESENTATION AND SELF DIRECTED STUDY VIA INTERACTIVE MEDIA	A1/A2/A4/B1	Active Experimentation
CARE PLANNING	60	Student are invited to complete a nursing care plan relevant to the patient from Scenarios 1 and 2	SELF DIRECTED STUDY VIA INTERACTIVE MEDIA	A1/B1	Active Experimentation
PATIENT ENQUIRY	30	Student are briefed to expect an inquiring phone call from the relative of the patient from Scenarios 1 and 2 who will request an update upon progress.	FACILITATED CALL VIA MS TEAMS	A1/A2	Active Experimentation
REFLECTIVE EXERCISE	30	Student are invited to reflect upon their day and post any observations on a discussion board. Discussions are monitored and facilitated by the faculty to encourage debate.	PEER TO PEER INTERACTION VIA DIGITAL DISCUSSION BOARD		Active Experimentation

Evaluation

Following the simulation placement students completed two evaluations. One was an anonymous online questionnaire and the second was the placement evaluation completed by all students following all clinical placements.

Online questionnaire

There were 208 responses out of a cohort of 394. Students were asked to rate their overall experience of the simulation placement, with 92% students rating the simulation placement as good/excellent. The vast Majority (92%) stated that the simulation placement had helped prepare them for real life practice.

The students were invited to give qualitative feedback on the most challenging and positive aspects of the simulation placement. The most challenging aspects were reported as either tasks or circumstances. Challenging tasks included taking the simulated phone call and completing documentation and terminology. Challenging circumstances unsurprisingly included lack of interaction and difficulties with technology and extended screen time.

Qualitative comments included:

'The most challenging aspect for me was the patient journey phone call as this was a little nerve racking. However I am now feeling more confident with this.'

'I found doing everything online quite a challenge but with the easy layout and brilliant support everything went well.'

Positive aspects included the learning that took place whether this was via online discussions or face to face skills sessions. Interestingly, taking the phone call was also reported as a positive aspect. It is worth noting that 17% student responses to this question made reference to feeling more prepared for practice:

'The most positive thing I feel more confident about going into placement in January.'

Placement evaluation

Following all clinical placements students are asked to complete an evaluation via the placement hub. This second data set allows us to make some comparisons with the cohort who undertook the simulated placement and the previous cohorts who experienced a clinical placement at the same stage of the programme. Table 2 illustrates the percentage of students in each cohort and field who gave 100% positive feedback:

Table 3: Percentage of 100% Positive Feedback

Cohort n=evaluations/n=students	Adult	Child	Mental Health	Average
09/17 137/219	82.7	89.4	84	85.4
09/18 160/225	83.7	85.7	64.7	78
09/19 230/304	76.9	72.4	78.1	75.8
09/20 163/394	84.2	84.6	61.9	76.9

This data illustrates that when comparing the placement evaluations with students who had clinical placements in previous years; students were comparably satisfied. It is noted that there is a difference for Mental Health nursing students scoring lower in 2020 and 2018.

Table 3 provides data of responses to three pertinent questions asked in the placement evaluation:

Table 4: 09/20 Placement Evaluation

Placement evaluation	Adult	Child	Mental Health	Average
Q1 I am satisfied with my placement experience	97.9% (n=95)	100% (n=26)	97.5% (n=40)	98.5%
Q2 I was able to achieve my placement learning outcomes	97.9% (n=94)	100%(n=26)	100% (n=40)	99.3%
Q3 Practice learning opportunities were identified & relevant...	97.8% (n=90)	100% (n=26)	100%(n=40)	99%

This demonstrates that the majority of students were satisfied with their experience, were able to achieve their learning outcomes and felt that the learning opportunities were relevant. Critically, a number of students commented that they had gained knowledge and skills during the simulated placement and felt well prepared for their clinical placement.

'This placement has given me an idea of what to expect when I go out into real life placement... it has given me a lot of confidence.'

'The most positive was I have loved learning everything on this placement, I feel I have learnt so much.'

Lessons Learnt

As the challenges to maintain quality education for student nurses increases, there is a continual need to adapt and think innovatively, to ensure learning needs are met. This simulation placement appears to have met and surpassed expectations. Particularly in light of the COVID 19 pandemic restrictions, the design of this simulation placement allowed flexibility in delivery, with no compromise to quality of teaching or reduction in student satisfaction.

However, there were lessons learnt, firstly an underestimation of the administration required for practice assessment documents (PADs), student enquiries and tracking student engagement. Students required further support to ensure PAD documents were completed appropriately. This will be addressed with more frequent meetings and short films developed to guide and support students more.

Student enquiries initially were many, usually related to minor technical issues. To ensure further streamlining of communication students will be directed to: 1) Check announcements 2) Check frequently asked questions section, 3) Email dedicated simulation support email address, to ensure that enquiries could be streamlined and more efficiently dealt with.

Tracking student engagement throughout the four weeks placement will continue to be time consuming. We are currently exploring how to use the same platform for all tasks so

that this information can be extracted more readily. In addition, having a designated administrator would ease workload on the simulation team.

The students also required further preparation before the simulated placement started, particularly with the technologies used. This is being addressed with several supportive sessions with students before the placement starts and access to the simulation support email for further questions.

This simulation placement has sparked considerable interest from colleagues, both regionally and nationally, therefore we have disseminated what we have delivered and our lessons learnt to other faculties and universities. The cross pollination of ideas from service users and the inter-disciplinary team within this simulation placement has been illuminating to all. This has now driven further interest and creativity in building upon future delivery for our second year student nurses.

Next Steps

Having discovered the benefits of using a blended approach in this delivery, the design and delivery of the second year and third year simulation placements will continue using both remote and face to face methods. However, there will be more face to face simulation aiming for 50:50 ratio. A staged approach will be utilised, building the complexity and challenges of the activities students will undertake. For example: more challenging communication skills, from undertaking a simulated phone call that is a general enquiry to managing a phone call with an upset relative or challenging colleague. This will reflect their stage of progression and ensure that the NMC proficiencies (NMC, 2018) are continued to be mapped throughout.

Whilst students in second and third year will have field specific elements with their simulation placements, interdisciplinary and inter-professional simulation-based methods are to be developed further. In particular, integrating further diversity and inclusivity into the patient's simulated narratives. There will also be a greater focus on peer review and feedback using a staged approach. Having an extensive range of cameras available within the simulation suites, students will be able to practice, record, review, reflect and if it's other peers work, learn to give appropriate feedback within structured frameworks. For example, utilising the Van Gelderen Family Care Rubric (2019) which is an educational tool which aims to deliver constructive and consistent feedback to students following simulation. Service users and students will be part of not only the delivery but the planning and design of future simulation placements. To achieve this goal, student interns have been recruited to facilitate the planning and design of our second year simulated placement.

Conclusion

In conclusion, we have developed a robust, versatile and flexible model of delivery. This flexibility not only allows for development and expansion, but also dynamic movement in percentage of delivery blend between remote and face to face. Enabling a pragmatic solution in response to the acute challenges of delivery during the COVID 19 emergency.

The evidence suggests that this new type of flexible simulated placement has met student nurses learning needs and prepared them for practice. Future simulated placements will continue to be developed, using theoretical underpinning to guide the structure and context, INACSL guidelines (2017), NMC standards (2018) and appropriate technology to enhance students' learning.

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