Background

Operating Department Practitioners (ODPs) provide an essential contribution to the multidisciplinary teamwork undertaken in the perioperative environment throughout the anaesthetic, surgical and post anaesthetic recovery phases of the patients' hospital treatment. The aim of this study was to explore ODP students' experiences and emotional responses to simulation teaching and learning strategies during their pre-registration curriculum.

Simulated teaching is well documented as a learning and assessment strategy throughout industry and health by offering safe, low-risk and interactive learning for students to develop a range of skills and competence in order to develop clinical performance (Ulrich and Mancini 2013). Although minimal evidence is available for ODP curricula, parallels can be drawn between trends that have been observed in nurse education, regarding the increase in student numbers and the limited placement capacity. In nursing the United Kingdom's (UK) Nursing and Midwifery Council (NMC) took an innovative response by allowing healthcare educators the opportunity to replace up to 300 curriculum 'practice' hours with simulated learning (NMC, 2007).

The Health and Care Professions Council (HcPC), UK's registering body for all Allied Health Professionals, including ODPs, outlines specific knowledge and skills in their standards of proficiency, which must be demonstrated in order for a qualified ODP to practice safely and register with them (HcPC, 2014). It is plausible to assume that not every ODP student will receive equal exposure to, and be able to perform safely when presented with critical clinical situations in the practice environment, due to the unpredictable nature of such events. And even when the events do occur, the novice student may not be allowed involvement in the care

due to inexperience (Halstead, 2006). In this situation simulation is often used as a learning and assessment strategy to enable all ODP students' equal exposure and opportunities to gain knowledge and experience of unpredictable and high-risk situations. An example of local context includes a requirement for the ODP students to undertake an assessment based on a real time cardiac arrest scenario whereby they must act as the team leader and make decisions based on the physiological reaction of the patient to their actions. This assessment is placed in the last term of a two year diploma programme and progression to qualification is dependent on success. Pre-registration ODPs on this educational pathway learn core and psychomotor skills using simulation in preparation for their first clinical placements, for example, aseptic techniques, surgical gowning and gloving. Simulation approaches involving more complex problem solving skills such as a patient scenario, using high fidelity technology, is not introduced until later in the curriculum. The assessment is run in real time and graded against a predetermined applied academic criteria linked to standardised patient scenarios. Anecdotal evidence suggests that ODP students find this simulation-based assessment particularly stressful and often become overcome with nervousness, which subsequently impacts on their performance.

Ulrich and Mancini (2013) suggest that one of the main benefits of simulation is that learners can take risks and discover consequences whilst implementing care in a safe environment. Moule (2011) concurs with our experience, arguing that simulation can also leave some students feeling exposed and anxious, which can have a negative effect on self-esteem, and can be further compounded by ultra realistic environments, which in turn can affect the overall learning process (Hellaby, 2013). Emotional response can be subjective to each individual and is dependant on their learning style and previous experiences (Bland, Topping and Tobbell, 2014).

Sample

Prior to any data collection, ethical approval was gained through University Ethics Procedures. Five participants (n=5) were purposively recruited from a cohort of 21, all of whom had experience of being involved in the curriculum simulation sessions. In order to avoid bias in the selection process the first students to reply were selected to take part in the focus group interview. All participants gave informed consent to their inclusion in the study. Participant confidentiality was assured.

Method

The aim of this study was to gain a range of in depth views to further understand ODP student perspectives and experiences of simulation as a learning and assessment strategy within the ODP curriculum. To effectively address this a qualitative approach was utilised informed by principles of the phenomenology approach (Green and Thorogood, 2014).

Data was collected using a 40 minute focus group interview one week prior to the simulated assessment and a follow up questionnaire three weeks after its completion. Both methods used open-ended questioning formats in order to produce data that best represented the detailed feelings and thoughts of the participants (Galletta, 2013). Due to group interaction focus groups often allow generation of rich descriptive data (Liamputtong, 2011). Table 1. Provides the questions asked in the focus group interview which were informed by a background literature review.

As the researcher was known to the group, Tufford and Newman's (2012) bracketing technique was employed, therefore holding in abeyance the researchers experiences, theories, biases and assumptions in order to allow the data to be viewed as it actually appears. Further to this, transparency was achieved by allowing the participants to read the transcripts and findings to verify that they were a true representation of the data. To gain a more holistic impression of the students' views, a questionnaire was undertaken four weeks after the initial focus group interview to allow the participants to reflect on the interview and gain further experience of simulation see table 2.

The data was transcribed verbatim. The six phases of thematic analysis devised by Braun and Clarke (2006) was used as a guide to structure the data analysis procedure. Initial analysis was undertaken by the primary researcher (LD) and independently reviewed by JG resulting in the following themes as presented in the results section. .

Results

Emotional response

Emotional reactions linked particularly to the social learning elements of simulation became apparent with described feelings of anxiety and nervousness; this pressure being linked to '*performing in front of peers'* and the potential to appear '*foolish*' or '*unknowledgeable*'. When comparing simulation to clinical practice the students found it challenging to attach an emotional bond during simulation using manikins, therefore in the absence of an actual patient. Further to this, they described the difficulty in recreating the 'adrenaline drive' they would feel in the clinical environment. This was attributed to the 'safety net' of knowing that their actions

could not directly harm anyone. This was demonstrated by the following interaction between three students:

> *"it's a different type of emotion, you can probably almost compare the stress levels but you can't compare the drive behind them ...because that's a person…yeah ...because you will have more adrenaline drive when you're doing it in real life ...whereas this is you've got the stress of doing it…you're more likely to go I've never done this before I need another Sim man"*

Interestingly continued exposure to simulation developed familiarity, which was linked to reduced nervousness and subsequent increase in confidence levels. This being said, the ODP students also defended that they would rather make mistakes in front of their peers than in clinical practice.

> *"although saying that I would rather have the simulation here and make the mistakes with you guys my friends than do it out on practice"*

Reid-Searl et al. (2011) made comparative conclusions in that the use of simulation helped some students to overcome the fear of making mistakes in clinical placement areas. Likewise Yeun et al. (2014) supports this discussion demonstrating that students display less anxiety in the clinical environment after being allowed the opportunity to practise first in the educational environment.

Learning styles

The social learning aspects of simulation were highlighted as motivation for the students to prepare themselves and become familiar with the underpinning theories behind the simulation scenarios.

"I suppose if you know you are going to simulate it, you almost do learn it maybe even read a bit about it before… whereas if you just know you are going to sit in front of a Powerpoint it might just be a case of you might just turn up"

This being said it was expressed that establishing clear up front criteria was essential in order for this to be successful.

Social learning theory allows the learner to recreate their own meaning by interacting with both the social and physical environment, which occurs through the observation of peers and active participation by the student (Peddle, 2011). The data highlighted that the sample ODP students favoured a more '*hands on'* approach to learning and that this supported information retention.

"I find it a lot better learning practically via simulation and stuff than sitting in front of a Powerpoint, but that's just because it's my learning style it might not suit everybody but I find I remember it better when I've practically done something"

Ferstein (2014) argues that we are only able to remember and interpret information that has been processed using emotional memory, therefore giving learning tasks emotional importance should enhance the ability for the brain to remember and interpret information (Nielsen and Harder, 2013).

Authenticity

An authentic learning environment was deemed essential and some students may be distracted by the artificial appearance of the environment or equipment used. It was however suggested that interaction with the manikin using the voice function increased the students' ability to overlook these issues.

"I found learning using the simulation suite easier to relate to as it was in a clinical setting and the patient actually interacted."

It is well documented that the aim of simulation is for the learner to actively experience and immerse themselves in a realistic situation (Baxter et al., 2009; Hellaby, 2013). This is often linked to the fidelity of the activity; low-level fidelity often being associated with task orientated activity such as hand washing or injection techniques, through to high-level fidelity utilising manikins capable of more lifelike characteristics and displaying physiological responses to interaction and stimuli (Baxter et al., 2009). A caveat to this however, could be that the engineered and psychological fidelity of a scenario may be directly proportional to the stress experienced by the student, as was the case in a study by Baxter et al. (2009); as the fidelity of the scenario increased, so did the students' stress levels experienced. It is prudent to note that an authentic assessment environment does not necessarily equate to a valid assessment (Schuwirth and Van der Vleuten, 2003). This also depends on consistent grading of the assessment and explicit criteria requiring a fine balance between authenticity, reliability and validity when developing appropriate assessment scenarios (Schuwirth and Van der Vleuten, 2003).

Assessment preparation

Overall students felt that simulation as a learning and assessment strategy was a good measure of applied knowledge.

"Simulation assessment requires candidates to revise and demonstrate skills - learn the subject ...pass the exam"

They highlighted that they would prepare more thoroughly for a simulated assessment than other strategies, although they would also prefer more opportunities to practise the assessment. Nervousness and feelings of stress and pressure were associated with simulated assessments although this was viewed both positively, with regard to emulating the challenging clinical environment, and negatively in that it affects the students' individual performance.

"I personally feel that simulation is an effective assessment strategy in that it is a practical exam that mimics some of the stress/emotion that would be felt in a real situation."

The evidence thus suggests that the benefits of incorporating stress levels into a simulated assessment closely match those experienced in clinical practice areas and outweigh the detrimental learning impact (Gantt 2013). Furthermore, this equips the students with lifelong learning skills in the way of developing coping mechanisms (Demaria et al., 2010).

Conclusion

This research highlighted emotional links to simulation as a learning and assessment strategy with nervousness and pressure being associated with both the social learning aspects of simulation and performance. However, the students also found that simulation gave them increased confidence when on clinical placement. This is convergent with findings in research undertaken in other health professions (Johannesson et al., 2013), which indicates that whilst ODP is a specialised profession with very little existing literature pertaining to the education of students using simulation, parallels can be drawn from similar professions and findings generalised inter-professionally.

The ODP students interestingly argued that they would be more likely to prepare themselves before learning through simulation than they would other teaching and learning approaches, due to their peers and the pressures of the social learning environment.

The goal of all health professions is ultimately to improve patient safety through improved standards of care, this has already seen the development of a UK project by the Association for Simulated Practice in Healthcare (ASPiH) to develop a framework and produce national guidance on simulation as a learning strategy to inform curriculums in all health professions (Anderson et al., 2014). Furthermore the UK's Department of Health (DH) (2011) have identified that "*the use of simulation integrated into healthcare education and professional development curricula is recognised as one of the core approaches that will help support attainment of strategic workforce development goals*" (pg. 8). With a predicted increase in ODP student numbers and aligned shortfall of practice placement areas, it can be assumed that the uptake of simulation as a learning and assessment strategy in the ODP curriculum will have to imitate the models seen in other health professions in order to meet the

professional standards of the HcPC (2014). With increasing pressure on education institutions to ensure safety improvements in the reliability of standard care processes, it is vital to introduce parity and equal learning opportunities in order to reduce variability and improve the reliability of practice (Healthcare Foundation 2011). Further to this the infrequency of clinical emergencies in practice placement areas and inequity of exposure and involvement to these amongst ODP students highlights the need for simulation based training to be fully integrated into the educational curriculum.

This research did not set out to champion an existing simulation program, however, by investigating the experiences of ODP students on the diploma pathway, improvements can be made to future healthcare education curricula.

Limitations of this study include the number of participants as a group size of between six and ten people provides optimal interaction (Yearous, 2006). While this yielded some interesting data, it cannot be said for certain that even more in depth data could have been gained from a larger group.

This paper suggests the following recommendations to enhance the educational benefits and quality assurance of simulation within the ODP curriculum and clinical practice:

- Establish a transparent and strategic structure to the simulation approach within the ODP curriculum;
- Increase the frequency of, and exposure of ODP students to simulation;
- Design simulation scenarios that have clinical relevance and mimic the authenticity of the clinical environment;

- Further exploratory research is recommended.