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A Follow-Up Study on the Clinical Impact of Pre-Registration Extended Immersive Ward-Based Simulation

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Simulation;
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Abstract

Aim: To explore how extended immersive ward-based simulation influenced graduate nurses' experiences six-months post-registration.

Background: Graduates of nursing training programs are expected to enter the workforce meeting the role of a registered nurse. Extended immersive ward-based simulation has been adopted by nurse educators as a means of easing the transition to professional practice. To what degree transfer of learning occurs from these experiences is yet to be determined.

Design: A qualitative descriptive design was used to conduct a series of face-to-face focus groups.

Methods: Participants were nine former students who had participated in a series of ward-based simulation workshops before graduating. A semi-structured interview process explored participants' transition experiences.

Results: Past simulation experiences were used as a base for practice in areas of teamwork, communication, conflict, and time management. Simulations were used as a point of reference and built confidence for transition to practice.

Conclusions: Transition to professional practice was supported by simulated experiences. Transfer of learning was demonstrated among participants.

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Introduction

Feelings of inadequate preparation for transitioning to professional practice increase the stress that nursing graduates often experience and, if left unresolved, can threaten longevity in the nursing workforce (Ulupinar & Aydogan, 2021). Graduate nurses often must learn 'on the job' how to manage a variety of situations that they have not encountered before as students. Significant stress arises from graduate nurses' increased awareness of responsibility and accountability in caring for patients on commencement of professional practice (Kreedi et al., 2021).

Key Points

- Continuation of simulation-based learning in nurse training programs relies on evidence to demonstrate transfer of learning into clinical practice has occurred.
- The adoption of extended immersive ward-based simulation by nurse educators is worthy of investigation in efforts to ease the transition of nursing graduates to professional practice.
- This study deepens understanding between nurse educators and industry expectations on what it means for graduate nurses to be 'practice ready'.

One approach used to address these issues has been the introduction of extended immersive ward-based simulation (Davies et al., 2020). This involves students taking on the simulated role of a registered nurse (RN) in the management of multiple patient scenarios. The benefit lies in exposing students to challenging situations that require autonomous decision-making in a supportive learning environment where concern for patient safety is eliminated if a wrong decision is made.

Background

Educators of undergraduate nursing programs have an obligation that on completion graduates are "practice ready" (Sparacino, 2016). Graduates often struggle with the ability to integrate knowledge they have acquired during training and being able to then apply this in clinical practice settings (Missen et al., 2016). Nurse educators are increasingly turning to extended immersive ward-based simulation which involves the students role playing being a RN as a simulated activity with multiple patients in a simulated ward environment (Davies et al., 2012; Kirkman et al., 2018; Pearson & McLafferty, 2011). Such programs allow educators to simulate what commonly occurs in daily practice as a ward nurse, managing a variety of patient scenarios whilst dealing with interruptions and distractions that require the incorporation of technical and non-technical skills. This enables students to develop experience as a RN in a safe and supportive learning environment (Jacob et al., 2022; Pearson & McLafferty, 2011).

The transfer of learning from simulated activities to clinical practice is needed to support simulation-based learning as an effective teaching pedagogy. The term 'transfer of learning' describes the application of knowledge to a situation that is different to where the original learning occurred (Ellis, 1965; McKeachie, 1987). Nurses are expected to draw upon prior knowledge and experiences and apply these to situations that they may have not come across before. To this end, it is important that nurse educators understand how simulation-based learning can be used to facilitate the transfer of learning into the workplace. Previous studies have mainly focused on developing competency in performing both technical and non-technical skills when on clinical placement (Hustad et al., 2019; Kirkman, 2013). Several studies have shown that simulated experiences have helped identify what would be expected of them as RNs (Brown, 2019; Bruce et al., 2019).

Only a few before and after study designs have investigated the transfer of learning following role based extended immersive ward-based simulation. Of these, the majority have evaluated learning satisfaction and improvements in self-confidence (Davies et al., 2020; Kirkman et al., 2018; Ragsdale & Schuessler, 2021). A shortcoming of investigations into the benefits of simulating ward-based activities has been the predominance of short-term studies in evaluating student learning (Davies et al., 2021; El Hussein & Cuncannon, 2022; Ross et al., 2022). Only one study found that the transfer of learning after exposure to extended immersive ward-based simulation was shown to occur during a three-month follow up of graduates transitioning to professional practice (Gamble, 2017). Longitudinal studies of six-months or more offer the opportunity to investigate further how nursing students transfer this earlier learning experience when transitioning to professional practice.

Theoretical Framework

Experientialism was the theoretical framework used for this study. Dewey (1938) and Kolb (1984) contend that individuals learn best through a cyclical process of exposure to realistic learning experiences, self-reflection, construction of meaning from the experience, and determination of future behavior following the experience. Hence, the knowledge gained is more effective in education if given the responsibility of managing patient care by themselves.

Aim

To explore how extended immersive ward-based simulation influenced graduate nurses' experiences six-months post-registration.

Methods

Design

A qualitative, descriptive design was used to conduct a series of face-to-face focus groups as a follow-up study to evaluate the impact of pre-registration extended immersive ward-based simulation in preparation of graduate nurses for professional practice six-moths post-registration.

Setting

The setting for this study was a metropolitan university in Western Australia (WA).

Simulation

The simulation involved a role-based extended immersive ward-based simulation experience in which two simulation wards were transformed into a hospital setting. Each ward had eight patient scenarios where the patient either improved or deteriorated based on actions of the nurses. Each ward was run by three nursing students in their final semester who undertook the role of the RN with other medical and allied health roles portrayed by nurse educators. Patients were acted by other nursing students who were provided with scenarios for each case outlining signs and symptoms and action to take in response to the nurses' actions or inactions. The simulation was run as a series of four-hour workshops for six consecutive weeks under the direction of a workshop facilitator. Each workshop depicted a shift and continued a clinical story of eight patient scenarios with participants debriefed at the end of every shift. Workshop participants rotated between the role of the RN and that of the patient. The simulation was designed to mimic a real-life hospital ward with nurses caring for multiple patients at one time with the simulation focused on the development of time management, teamwork, communication, and leadership skills. A set of learning objectives required students in the role of RN to demonstrate:

- Competency to analyze and interpretate clinical findings.
- Competency to collaborate with other team members.
- Competency to prioritize and implement appropriate nursing interventions.

Participants

Participants were drawn from 348 final semester baccalaureate nursing students between February and April 2021. Each had participated in the ward-based simulation workshops before graduation. Nine agreed to be interviewed as part of a six-month follow-up study to explore how the workshops had prepared them for their graduate practice (Davies et al., 2022). Of the nine participants, one was male. The median age of participants was 32 years (interquartile range [IQR] 42-29 = 13). Participants were contacted six months post-registration by email and asked to be interviewed. The size of each focus group was dependent on the availability of participants. Participants who were unable to join a focus group were interviewed separately. All had obtained jobs after graduation and had been practicing as RNs for six months. Five were employed in general medical wards, two on a surgical ward, one worked as a theatre nurse, and another worked in general practice.

Ethical Considerations

Approval was granted by the university's Human Research Ethics Committee (Project Code: 19336 DAVIES). Written informed consent was obtained from participants. Confidentiality of participants was maintained using pseudonyms in the reporting.

Data Collection

Data collection occurred between February and March 2022 via Microsoft Teams and audio-recorded. One researcher facilitated the focus groups, while another took field notes. Both were employed at the study site as nurse educators. Neither of the focus group facilitators was involved in the simulations. Each was an experienced facilitator familiar with focus group moderation. Probing questions were predetermined, open-ended and exploratory (see Box 1). The wording of questions was pilot tested by a nurse educator not involved in the study. One hour was allocated for discussion. At the end of the focus group or interview, the lead facilitator provided a summary of what was discussed and the opportunity for participant(s) to provide feedback. Transcriptions of audio-recordings were cross-referenced for accuracy with written field notes increasing creditability of the analysis. Members of the research team were nurse educators who had practical knowledge and experience of teaching nursing skills to students in preparation for clinical practice.

Box 1 – Focus Group Semi-Structured Probing Questions.

- During your clinical practice as a graduate nurse were you involved in situations that caused you to think back to your ward-based simulation workshop experience? If yes, can you provide an example?
- Can you provide examples of how the ward-based simulation workshops helped you to develop or improve your clinical practice six months after graduation as a registered nurse?
- Do you feel participation in the ward-based simulation workshops helped you to be ward "ready" and accept the responsibilities of a registered nurse?
- Based on your experience of the ward-based simulation workshop and your experience as a graduate nurse is there anything you can suggest that would further develop this type of learning?

Data Analysis

Thematic analysis was undertaken of the transcripts using the six step-by-step process suggested by Braun and Clark (2006). This involved the researchers reading through the transcript and becoming familiar with the data. Coding was undertaken manually using colored pens with copies of comments and assigned codes organized as a Word document (Microsoft, Seattle, Washington). This was followed by searching through the coded extracts to identify potential themes. The searching for themes was then extended to the remaining researchers. This continued until no new information was able to be identified. Several meetings took place to finalize themes and through consensus reach agreement on named themes. The description of this study followed reporting guidelines by Cheng et al. (2016) for healthcare simulation research and adheres to the consolidated criteria for reporting qualitative research (COREQ) guidelines for interviews and focus groups (Tong et al., 2007).

Results

Of the nine graduate nurses who had participated in the series of pre-registration ward-based simulation workshops, all responded positively to a request six-months post registration to attend a follow-up focus group. Differences in the availability of participants resulted in the holding of one focus group with five participants, a second with two participants and one as an interview. It was not possible to arrange a meeting with one of the original nine participants due to the participant being unavailable because of workplace commitments. Duration of focus groups was 93 minutes and 69 minutes. The interview lasted 70 minutes. The eight remaining participants revealed six themes exploring the relationship between their previous simulated workshop and professional practice as registered nurses. The themes included: preparedness; point of reference; teamwork and delegation; time management; dealing with workplace conflict; and confidence building.

Preparedness

Participants felt that the simulations were useful in preparing for professional practice, although there was an acknowledgement that some things can only be learnt through work situations. One participant said:

> *I definitely feel like you learn the most from those kind of simulations where you get the opportunity to practice as it were, more than any kind of particular task or skill... It's massively helpful.* (Molly)

Another said:

> *I don't think you really understand the importance of those workshops until you're out and then you look back at them and you're like, actually, no, that was really, really helpful... Even though you don't realize it at the time, they're so valuable in terms of practicing.* (Lola)

Another responded by saying:

> *It definitely did help prepare I think it can prepare you responsibility wise somewhat.* (Bianca)

Point of Reference

The theme refers to the use of the simulations by the participants as a point of reference on which to base their decisions whilst in clinical practice. All participants were able to recall the simulation experiences and use these as a guide for their current practice.

> *I think getting exposure to situations give you a point of reflection on when you do get exposed to it in real world. Like, okay, so this is what happened in that simulation and this is what worked well, what didn't work well and then apply that… Rounding it all out and putting it into practice.* (Molly)

and

> *The patient ended up having a seizure because the meds were, I think they were delayed …So it did stick out in my mind definitely and I think as well the students who were nursing that day as well. Because it was a really hard lesson straight up, but it's definitely one that has stuck.* (Bianca)

and

> *That's a standout simulation example for me overall, that you know that there is a role for lots of people to be involved.* (Zoey)

Teamwork and Delegation

Teamwork and delegation practiced in the simulation workshops was of benefit to participants when transitioning to professional practice. One participant mentioned that

had it not been for the previous experience of seeing the benefits of working collaboratively towards a common goal they would have not realized its importance in managing patient workloads:

> *Absolutely, I think the basis of those workshops were the teamwork. Because it was the first time that we'd moved from – today we're going to learn how to do catheters or today we're going to learn wound dressings or one particular skill. Whereas these simulations were like a day on the ward, and you had to work in a team, because one nurse can't do everything like that.* (Lola)

and

> *You start to think more practically because you realise, you're not alone, it's a team effort. That very much I think, was reflected in that scenario in real life.* (Molly)

Time Management

Time management was an important part of the RN role that benefitted from the simulation workshops. Several participants recounted lessons they had learned from the simulation workshops on how to manage time in getting things done. One participant said:

> *It was the first time that we'd moved from skill-based to ward-based simulations. So, I think that was really important because it was the first time your brain moves from task orientated to clustering care…Then you had to evaluate which one was the most important based on A to E, the nuts and bolts of it. So, that was really valuable for me, moving into ward-based nursing. Because as I said, it was the first time that, in my mind, it had moved from an abstract concept to an actual, okay, well this is what you're going to be doing day in, day out .* (Lola)

Another participant said:

> *Yeah, the hardest thing, and still for me sometimes now, it depends on who you're looking after, it's just prioritizing and getting the important things done. I think as far as the workshops went, once you got into it a bit, I think that was really an underlying focus of all of them… I think the time management and the planning, and the prioritizing is the most important stuff to really get it into your head before you're actually a nurse.* (Bianca)

One other participant shared his experiences of transitioning to professional practice by saying:

> *You reflect on things you could have done better each shift and that improves your skills and your time – especially your time management…you've got lots of dressings, you've got lots of IVABs* [intravenous antibiotics] *to give, it's that constant looking at the chart all the time, you know, "is that the right mixture I've got" and all that stuff… As I said, the workshop will give you a basis of that.* (John)

Dealing With Workplace Conflict

Many participants found the simulated portrayal of conflict and observing how to handle difficult situations was something that they subsequently had become accustomed to dealing with in professional practice. It was recounted by one participant that:

> *I always make sure I've got a duress alarm and I don't hesitate. There's no point mucking around or being in a room if you've got a patient that's escalating, just call it. If you think you're going to need backup, it's better sooner rather than later.* (Bianca)

Another said that they had found the workshop useful to see how conflict can be resolved:

> *There was also an instant where there was a doctor that came in that had conflicting interests, it effected your time management and how you were going to address that. Sometimes, the power dynamics, that can be there as well, I think that was really good to have some exposure to that, because that can happen. Yeah, I think it was very valuable to have that exposure so you can figure out what works and what doesn't work as well.* (Molly)

Confidence Building

Development of confidence was a major part of the simulation. Some participants recounted that the workshops had given them the opportunity to act out a variety of situations that had made them feel more confident to deal with other situations they experience as graduate nurses. This participant said:

> *Yeah, but then reflecting on it… it really gives you that confidence to realize that, yeah, I do know what I'm doing, I can do this. Then this made me realize that my time in uni* [university] *really helped when it came down to the real thing, you know.* (Lola)

and

> *I could feel my confidence growing while I was attending the workshops. I felt quite supported, and I think the group I was with was really fantastic as well. Everyone was very supportive, so I didn't feel judged.* (Molly)

For another, it was the opportunity to observe and reflect on went well during the workshops and the ability to learn from others when things did not go well that had given her confidence as a graduate nurse:

> *I guess the workshops offered us a very safe environment and then you can see what – at the end, you reflect on the shift and you could see the difference between certain individuals, you know? You could take a bit of knowledge from them and you could self-reflect if you*

didn't do so well in one workshop, you could take that away and improve for the next one. (Nina)

Discussion

The aim of this study was to explore how the use of simulation was translated into practice by graduate nurses six-months post-registration. All participants were able to recall aspects of situations they had encountered in professional practice that had caused them to reflect on what they had learned as students during ward-based simulations. Our findings show simulation-based learning among participants had endured through to professional practice and had informed practice during the transition experiences of participants.

The preparedness of graduating students for professional practice continues to receive ongoing attention and scrutiny among nurse educators and industry partners (AlMekkawi & Khalil, 2020). All participants believed the simulation workshops assisted with preparedness for practice. Studies have shown high levels of learning satisfaction among final year nursing students following immersive episodes of simulated ward-based activities in preparation for professional practice (Davies et al., 2020; Kirkman et al., 2018). This study is one of the first to demonstrate that the learnings from immersive simulations can translate in long term clinical practice. Most of the learning was related to higher order skills such as communication, conflict resolution and time management. Participants were able to recall previous simulations and use the learnings as the basis for their clinical practice.

Teamwork and delegation played an important part in transitioning to professional practice. Working as part of a team in delivering nursing care through simulated experiences have successfully demonstrated the benefits of teamwork (Barton et al., 2018). Hands-on experience during the workshops bore witness to the impact of unbalanced workloads when not working together as part of a team in the delegation of tasks. This experience was recounted by participants as something that they had taken with them into professional practice where they worked as part of a team and delegated tasks as a graduate nurse. Including delegation as part of the simulation was a unique part of this simulation and valued by graduates. It is reported that graduate nurses often struggle to delegate tasks to support workers who are often older making the nurse apprehensive to request assistance in managing patient workloads (Crevacore et al., 2022).

Managing a patient load has been reported as something that nursing graduates often find difficulty with when first entering the workforce (Litchfield & Chater, 2007). If opportunities to practice time management behaviors are limited prior to transitioning to professional practice, there is a danger that new graduates are more likely to focus on the completion of tasks at the expense of providing safe patient care (Murray et al., 2019). Nurse educators have the capacity to teach effective time management through simulating activities that students will be expected to perform as graduate nurses (Aggar et al., 2018). Participants in this study felt the simulation workshops had provided the opportunity to practice time management behaviors in planning and prioritizing nursing care.

New graduate nurses are not immune to workplace conflict and have expressed vulnerability in response to aggressive behaviors perpetrated by patients and relatives or from workplace bullying by colleagues (Chang & Cho, 2016; Mammen et al., 2018). The same sense of vulnerability was expressed by study participants who provided examples of behaviors they had encountered that had resulted in fearing conflict and had used insights derived from the workshops as a means of managing situations that had occurred during professional practice. The use of simulation has been shown in other studies to offer a learning opportunity for nursing students to develop and practice strategies for dealing with and resolving conflict before graduation through exposure to a variety of workplace scenarios that commonly occur in the workplace (Martinez, 2019; Ulrich et al., 2017).

Simulation workshops were able to assist in building confidence in preparation for assuming the responsibilities of an RN. According to Bandura's theory (1997) on self-efficacy individuals who are faced with a challenge develop a belief in themselves when a task ahead of them is completed successfully leading to feelings of confidence and satisfaction. The use of simulation in undergraduate nursing education has been widely adopted as a teaching pedagogy with simulated activity now embedded in course curricula to complement experience gained on clinical placement (Bogossian et al., 2018; Hayden, 2010). A series of simulation workshops undertaken over several weeks was shown in a pre and post-test survey of learning satisfaction to be instrumental in building confidence among final year nursing students in preparation for professional practice (Liaw et al., 2014).

Strengths and weaknesses

This is one of only a few studies that have investigated the long-term impact of extended immersive ward-based simulation on nursing graduates' transition to professional practice. The reflections of former students on the transfer of learning from simulated experiences to professional practice provide an opportunity to increase our understanding on how pre-registration ward-based simulation activities can increase readiness of graduating students for professional practice. A weakness of the study is that a purposeful sample of former students known by the researchers was used that may have influenced how participants responded to questions put to them, and as such, the reported experiences cannot be assumed to be transferable to other cohorts. It was decided not to return transcripts to participants despite the advantage it offered in members checking what was said during the focus groups or interview. Our

decision was influenced by concerns that not all participants would necessarily respond, and integrity of the data compromised if other participants were allowed to make amendments. Generalization on findings can also not be made regarding the use of ward-based simulated activities involving other healthcare disciplines since the cohort of participants who transitioned to professional practice were comprised entirely of nursing students.

Conclusion

Simulated experiences in playing the role of an RN as a final year student can provide a learning opportunity that is transferrable to the workplace six-months post-registration. Awareness by nurse educators of what former students struggle with when transitioning to professional practice allow the development of ward-based scenarios to inform graduates on what to expect using realistic examples that mimic situations commonly encountered by registered nurses.

Author Contributions

HD, DS and EJ conceived the study. SR and DS were responsible for facilitating the focus groups and interview. Data analysis was performed by HD and SR. Interpretation of findings were reviewed by DS and EJ. HD drafted the manuscript. DS, SR and EJ made revisions before final version was submitted for publication.

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Declaration of competing interest

The authors declare no conflicts of interests.

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