

TITLE PAGE

LEARNING TO LIAISE: USING MEDICATION ADMINISTRATION ROLE-PLAY TO DEVELOP TEAMWORK IN UNDERGRADUATE NURSES.

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Background and Introduction

Medication administration involves complex processes from initial prescription through to post administration documentation (Jennings, Sandelowski & Mark 2011). Errors to the process of medication administration remain a central patient safety issue (Westbrook et al 2010; Clinical Excellence Commission (CEC) 2013; Hayes et al 2015; World Health Organisation (WHO) 2014). Medication errors and incidents occur at an alarming rate (CEC 2011; WHO 2014), and are caused by several contributing factors (Hayes et al 2015 & 2017), including interruptions to the administration process and breakdowns in communication (Westbrook et al 2010). Effective communication is an important component of practice for nursing students and clinicians, that requires effective liaison within a team and is often the subject of discourse related to practice readiness (Oermann et al 2010; Wolff et al 2010; Hofler & Thomas 2016; Nursing and Midwifery Board of Australia (NMBA) 2016).

Effective liaison within teams incorporates critical thinking, situation awareness, collaboration, communication, an understanding of the motivations and goals of others, active listening, and empowering others by offering guidance and support (Day-Calder 2016). There is an expectation that nurses (albeit at varying levels of ability); liaise between patients, the extended healthcare team and each other during all aspects of care including during medication administration (Royal College of Nursing (RCN) 2010; Nursing and Midwifery Board of Australia (NMBA) 2016). Despite the expectation that nurses liaise effectively with all these groups, the majority of available nursing liaison literature focuses solely on empowering patients, fostering

relationships between patients and facilities and patients and members of the greater healthcare team providing their care (Day-Calder 2016; McNabb et al 2016).

Novice and advanced beginner nurses often have limited capacity to effectively liaise within the teams in which they work. The close working relationships required within healthcare teams can be difficult for less experienced nurses to navigate due to lack of confidence (Oermann et al. 2010) and inequities in power with more senior nurses (Smith, Andrusyszyn & Laschinger 2010). Interruptions and distractions to the administering nurse have been reported to take place in over 50% of medication administrations (Westbrook et al 2010). Therefore developing effective liaison skills in preparation for working in dynamic, interruption prone clinical environments is critical. However, there are limited reports about how to effectively prepare undergraduate students in the area of disrupted medication administration. Deliberately crafted simulation experiences offer authentic clinical scenarios that can prepare undergraduate students for the crucial transition skill of effective liaison between nurses during interrupted medication administration.

Current undergraduate education aims to provide experiences that are designed to develop professional identity and prepare undergraduate nursing students for clinical practice as both a student, and as a registered nurse (Moscaritolo 2009). However, experienced registered nurses, nurse managers and nurses transitioning into the workplace have all identified that newly graduated nurses are often under-prepared for the challenges that face them in practice (Wolff, Regan, Pesut & Black 2010). Challenges may include inadequate knowledge and/or skill base, inadequate socialisation processes or lack of understanding of their role in the workplace (The International Council of Nurses 2009).

A clear and widely accepted definition of practice readiness is yet to be firmly established. One Canadian study concluded that practice readiness involves several key attributes whereby nurses are able to safely undertake nursing tasks and skills using critical thinking and underpinning knowledge (Wolff, Regan, Pesut & Black 2010). In the Australian context, the skills required for practice readiness are measured against the NMBA standards for practice (NMBA 2016). The NMBA (2016) identified two of the key skills required for practice readiness as having an understanding of how to work within a team and being able to communicate effectively. This requires nurses to collaborate and liaise with each other across varied situations, including interrupted medication administration.

To improve communication and team work skills and enhance practice, students need to develop an awareness how they fit into, and impact, the environment and situation in which they find themselves (Horton-Deutsch 2013). The importance of situation awareness in the high-risk health environment has been acknowledged in the literature (Sitterding et al. 2012). Situation awareness and self-awareness are informed by personal reflection (Boud, Keogh & Walker 1985; Hayes et al 2018), encouraging a cognizance of self that most often results in an ability to make well thought through decisions that incorporate the needs of others within a team, profession and organization (Hayes 2018; Horton-Deutsch 2013).

This paper focuses on the direct liaison relationships between nursing teams during interrupted medication administration. It is drawn from a larger doctoral study which aimed to enable undergraduate nurses to experience, reflect on and analyse their responses to interruptions during medication administration. To facilitate richer consideration and understanding of these key themes from the large pool of data the

findings were separated into three papers, a suitable strategy according to Jackson et al. (2014). Findings addressing the complexity of medication administration (Hayes 2017) and reflection on practice (Hayes 2018) have been published elsewhere. Although the need for teamwork and communication are common across all themes, as they are in the execution of all nursing tasks, it was considered important to separate and explore these concepts as they pertain to learning to liaise with other members of the nursing team. To consolidate and validate these findings as standalone concepts, yet situate them as part of the larger study, this paper presents the results from the third theme 'Learning to Liaise: team work for positive patient outcomes' and its associated sub-themes.

Research Questions

How do novice and advanced beginner undergraduate student nurses respond to interruptions during the medication administration process?

Does the introduction of a simulated role-play experience involving interrupted medication administration raise awareness of the impact of interruptions and facilitate new insights into interruption management strategies?

Methods

This study sought to describe and interpret the student experience to achieve an in-depth understanding. Therefore, qualitative research methodology and data collection techniques were employed. Students were provided with five questions designed to identify the role they had played during the simulation and stimulate thought.

Educational and nursing theorist perspectives (Benner 2001; Kolb 1984; Tanner 2006) supported the design of this study and are described in table 1. To increase

understanding of concepts surrounding safe medication administration a role-play simulation was designed that utilised a four-step process: briefing, immersive role-play scenario, debriefing, and written reflections (see table 2). During the immersive scenario students were exposed to interruptions during the process of medication administration. The simulation intervention was supported by validated simulation frameworks and is described in table 3 (Arthur, Levett-Jones & Kable 2010; Jeffries 2005).

Study participants

Potential participants were undergraduate nurses (n=528) enrolled in a requisite second year medical-surgical nursing subject within a bachelor of nursing program, in a large metropolitan university. All 528 students partook in the simulation experience and a total of 451 students completed written reflections which represented 85.42% of those who took part in the simulation. The student participants included 85 males and 443 females with a mean age of 26.56 years.

Ethical considerations

Participants were provided with information sheets and verbal communications regarding the project and were advised that they could opt out of the study by not completing the reflection. Information sheets and consent forms emphasised that participation was voluntary. As some members of the research team work within the faculty in which the research took place, the possibility of students feeling obligated to participate was considered. Students were therefore informed that their choice regarding participation would not be revealed to the subject coordinator and that all collected data would be de-identified and stored in a secure location. The ability to

withdraw from the study prior to de-identification was reinforced. Institutional ethics approval was obtained for this study HREC REF NO 2013000094.

Data collection and analysis

Students submitted non-assessable reflections varying in length from one paragraph to two pages within a fortnight of the simulation. Reflections were photocopied and de-identified by the primary researcher. Thematic analysis was chosen as it facilitates identification and examination of patterns within data (Braun & Clarke 2006). Accurate interpretation and reporting of findings was supported by using a recognised approach to the analysis process as described by Guest, MacQueen and Namey (2012). The raw data were read numerous times. Coding facilitated the identification of preliminary themes and subthemes by the first author, which were then deliberated on by members of the research team. Once consensus was reached, findings were considered valid. The primary researcher maintained engagement with literature addressing related themes, and the large participant numbers added to the credibility and validity of the study (Streubert & Rinaldi Carpenter 2011).

Results

In presenting the findings, responses from student participants were grouped according to role; medication recipient (MR), confused patient (CP), interrupting nurse (IN), administering nurse (RN), observer (OB).

Key theme: Learning to Liaise: team work for positive patient outcomes

To ensure safety of self, other members of the nursing team, and most importantly the patient; nurses need to demonstrate the social and cognitive skills associated with situation awareness. This includes the nurse identifying the needs of those around them so that they can effectively liaise and collaborate within a team. Two subthemes

were identified from the data 'Considering the team: gaining awareness of the roles of others' and 'Engaging effectively: recognizing the relationship between staff interactions, collaboration and patient safety'. Elsewhere we have discussed how students managed interruptions to the medication administration process, describing employing critical thinking, prioritisation, time management, creative strategies such as trying to distract the confused patient, or negotiating with the interrupting nurse (Hayes et al 2017; Hayes et al 2018).

Subtheme: Considering the team: gaining awareness of the roles of others

Participants were able to look beyond themselves and recognised the role they played in the simulation experience from the perspective of other nurses within the team.

'This simulation has helped me to understand that as a registered nurse, it's not just about me and my allocated patients' OB

Several students reported that the situation highlighted the need to enlist the help of other members of the team.

'The simulation was extremely helpful. It reminded me of the need to be able to ask for help and to delegate when necessary' IN

They reported a deeper understanding of their role in respect to the delegation of others. They described that they had learnt the importance of a holistic approach when liaising with the team to provide solutions and effect changes in workflow.

'Looking at the holistic picture and effectively tackling issues that arise – multitasking effectively and delegating – team work' IN

Some expressed feelings of guilt, regret, and empathy for not considering the needs of team members. This was most often communicated by those who had played the role of the IN.

'I felt quite bad for the nurse I was interrupting' IN

Subtheme: Engaging effectively: recognizing the relationship between staff interactions, collaboration and patient safety

Positive relationships and collaborations with staff in the clinical environment, with student peers and teaching staff in the educational facility, can impact each students' ability to provide a safe environment for patients. One of the first collaborative relationships that participants identified was that of the relationship with each other as peer to peer learners and the opportunity to improve knowledge and skills.

'It (simulation) is the only place where we can improve on our mistakes and learn through each other - our co-students' CP

Liaising implies a relationship, requiring modifications to ones actions and interactions with others. Students were able to consider changing their actions within an interrupted environment.

'It gave me perspective of when are and are not the right times to interrupt' IN

Some students recognised not only appropriate times to interrupt, but also noting opportunities to make themselves approachable, and assist where possible.

'Having had this experience during the SIM I feel that I will make a conscious effort to avoid interrupting during critical patient care moments, and to offer any help that my colleague may need' IN

Students recognised the significance of being an active participant within the team and effectively liaising as a way of achieving identified interruption management goals.

'[we need to] engage and communicate with the other RNs so we can assist each other to coordinate and prioritise care' RN

Collaboration within the nursing team was repeatedly reported by students as essential in order to cope with the situation in which they had found themselves (managing multiple interruptions).

'In this situation I think collaborative working is most important' RN

Others reported the possibility of utilising broader resources for collaboration and assistance, considering liaising with the wider health care team.

'Collaborative strategies in interaction with other healthcare professionals' TG

Importantly there was an understanding that being part of a team and collaborating effectively within that team is necessary for safe care.

'Working as a team with collaboration and cooperation to minimise disturbances which lead to medication errors' CP

Discussion

During the medication administration process, the administering nurse, patient, and other members of the health care team all play a part in maintaining patient safety (Bolstera & Manias 2010). These individuals can be either the source of interruptions; or contribute to solutions aimed at managing them (Hayes et al 2014; McGillis Hall et al. 2010). The simulation described in this paper was designed to mimic the real clinical environment and enhance practice readiness. Students were placed in a situation where they would be put under pressure from interruptions whilst administering

medications to build situation awareness and facilitate effective liaison through communication and collaboration between the team to manage those interruptions.

Safe and effective care requires high levels of situation awareness (Sitterding et al. 2012). Building improved situation awareness requires reflection on practice, which encourages the examination of actions as they relate to self and others (Boud, Keogh & Walker 1985; Epp 2008; Schon 1983). Elsewhere we have argued the importance of reflection on effective nursing practice (Hayes 2018), and the significance of the reflective process following experiences as described in this paper is again acknowledged. The written reflections that followed the simulation experience revealed the students ability to articulate a beginning understanding of the impact of their decisions and actions on the team around them. Students showed a burgeoning ability to perceive what had happened, comprehend the meaning of what had happened, and then predict possible impacts and outcomes (Hayes et al 2017; Hayes et al 2018). These three attributes have been described in the literature as being associated with situation awareness (Sitterding et al. 2012).

Knowing how and when to ask for help or indeed how and when to offer it, are essential when aiming to provide safe and effective nursing care and as such are essential in the nursing role (NMBA 2016). The students in this study revealed an understanding that disrupted medication administration may require them to either offer or call on other nurses for assistance, recognizing others expertise and learning from the experience. These key skills and abilities are crucial elements in minimising patient risk and are requisite in all aspects of nursing care - including medication administration.

In a recent study, Ekstrom and Idvall (2015) found that nurses' ability to prioritise and delegate within a team environment was enhanced if they understood the organisation in which they were working. Encouraging undergraduate nurses to take on challenging experiences in the simulated environment where they are required to consider what it will be like for them in clinical practice, provides the opportunity to gain new insights into what it means to be a part of a team. Role-play simulation was utilised to provide a realistic clinical experience and proved significant in the student journey to understanding the importance of team interactions and their relationship to providing optimum patient care during medication administration. This aligns with previous studies that have highlighted the importance of communication within the healthcare team to reduce medication errors (Wilson et al 2016).

Facilitating simulation experiences for undergraduate nurses that encourage them to explore their role and liaise and collaborate for effective inter-team communication and improved situation awareness when faced with interruptions, can only serve to reduce the risk of error and improve patient safety. Practicing these positive collaborative relationships, team work and liaison skills should begin within the academic learning environment where nurses first learn their craft. The simulation experience presented in this paper provided an authentic, simulated environment in which these skills could be practised and reflected on. Providing simulated experiences in the university setting that expose students to the reality of practice through authentic environments and realistic scenarios, such as the experience discussed in this paper, is one way of assisting transition to practice.

Study Limitations

Convenience sampling at a single university reduces transferability of findings, however the collection of data over two campus' and the large participant numbers strengthened the validity of the study. No identifiable demographic data was attached to the reflections; inclusion of this data may have provided additional insights. This research paper provides a subjective perspective of situation awareness, achieved by collecting student written reflections of both observed and actual experiences in a simulation. Findings may be supported and enhanced by investigating improvements to situation awareness following this role-play by using objective measurement tools such as the Situation Awareness Global Assessment Technique (Endsley et al 2000). Moreover, exploring this issue within a broader interprofessional context may further elucidate situation factors.

Impact Statement

Teaching undergraduate nurses to administer medications in simulated dynamic environments that parallel the real world of clinical practice, provides an opportunity for them to develop both technical and non-technical skills. Understanding their responsibilities as part of a team when faced with interruptions facilitates authentic responses and opportunities for collaboration in an error prone situation. Exposing students to similar simulation experiences both during and following clinical practicum may further impact the student experience.

Conclusions

Facilitating a smooth transition from student to newly registered nurse, competent in the safe administration of medications, has been a long-standing issue for nurse managers, students and educators alike. Ensuring students learn to manage interruptions effectively and safely during medication administration requires situation

awareness, effective liaison between the nursing team, and honed communication skills. If undergraduate nurses are not adequately prepared for the often abrupt transition to becoming a registered nurse medication errors are more likely to occur. The simulation scenario and environment used in this study established a safe place for undergraduate nurses to explore concepts underlying liaison, collaborative team work, communication and safe management of interruptions during medication administration.

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