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Medication administration and final year nursing students

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Abstract

The literature continues to report on medication errors occurring within Australian health care facilities every year. For this reason anyone who is admitted into a health care facility and is required to have medications is at risk of being the recipient of an unintentional medication error. Because nurses are primarily the health care professionals who administer medications to patients, students in undergraduate nursing programs are taught that this skill demands absolute vigilance in safety. This paper reports on a PhD study aimed at identifying the experiences of final year undergraduate nursing students when administering medications to patients in the clinical setting. A grounded theory approach with constant comparative analysis informed the development of an explanatory substantive theory. A sample of 28 final year undergraduate nursing students from a regional university provided data in order for theory development. This study identified that supervision was central to medication administration experiences for final year students. The discourse foci will be supervision levels provided by registered nurses. The findings in regards to supervision have numerous implications for safe medication administration practices of undergraduate nursing students in health care facilities throughout Australia which ultimately affect patient outcomes.

Key words: Medication administration, Undergraduate nursing students, Medication safety and undergraduate nursing students, Supervision of undergraduate nursing students

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Introduction

The administration of medications to patients is a complex process undertaken by appropriately qualified nurses every day. This skill, however, is not without significant risk. Errors can occur at any stage in the administration process, which can result in patient harm or even death. To reduce the chance of errors, pre registration nursing students are taught about the requirements of safe practice in the theoretical and practical components relevant to medication administration in their undergraduate programs. Part of safe practice includes being aware that they must be supervised by a registered nurse when administering medications to

patients. This is a legal requirement which is embedded in Queensland legislation. The following paper will present findings from a grounded theory study, which identified that supervision is central to student experiences in medication administration.

Implementing safety strategies to prevent medication errors involves collaboration between a number of professional groups including the medical practitioner, the pharmacist, the registered nurse, the patient and their family or carer(s) (Queensland Nursing Council 2005). The medical practitioner has the responsibility of safe practice when prescribing the medication, the pharmacist in ensuring the right medication is dispensed and finally the nurse in the actual process of administering the medication to the patient (Cheek 1997; Jarman, Jacobs & Zielinski 2002). The nurse is considered the final link in the safety chain in terms of preventing medication errors. To practice safe medication administration the nurse must ensure that correct procedures are followed. This ensures that the patient receives the correct medication and dose at the correct time and by the correct route (Delaune & Ladner 1998). Many studies (Bindler & Bayne 1991; Kapborg 1994; O'shea 1999; Wilson 2003), have reported on nurses and medication errors, hence it is not surprising that safety strategies surrounding medication administration are embedded in policies and legislation that govern nurses' practice. The legislation in Queensland, Australia not only clarifies the classification of nurses who can legally administer medication but also specifies supervision requirements. Undergraduate nursing students in Queensland, as trainees, are authorised to administer restricted medications and controlled medications only if they are under the personal and direct supervision of an authorised person, such as the registered nurse who is employed in a relevant occupation (The Health (Drugs and Poisons) Regulation (1996), Queensland Parliamentary Council 1996). While legislation governs who can administer medications, it does not specify how the process should be undertaken (Savage 2007) or the education required. For pre registration nursing students, this education begins in their undergraduate programs.

The education incorporates two clinical environments in which students learn the skill of medication administration. These include laboratory within the tertiary environment (the on-campus clinical setting) and the ward environment of the health care facility in which the student undertakes their clinical practicum (the off-campus clinical setting). Within the on-campus setting students are introduced to the principles of medication administration which require critical decision making, a need to consider environmental factors, the context in which the medications are being given and most important of all, patient safety. Within this setting the risks are low as students utilise simulated medications, mannequins and role play. The off-campus clinical setting is, however, vastly different. Students apply the principles that they have learnt in medication administration to real patients using real medications. Even though this setting has been recognised in general as valuable to student learning, little has been understood about what occurs for students in this context when they administer medications. Therefore the purpose of this research was to explore what influences the process of medication administration for nursing students when in the off-campus clinical setting. The sample chosen for this study consists of final year undergraduate nursing students undertaking their last clinical placement prior to registering as a nurse.

Aim of the study

Two main aims existed for this study. The first was to discover and describe phenomena concerning final year undergraduate nursing students' experiences

when administering medications whilst in the off-campus clinical setting. The second was to generate a substantive theory, using a grounded theory approach, to explain their experiences.

Research question

The research question underpinning this study was: What influences the process of medication administration for final year nursing students when in the off-campus clinical setting?

Methodology

Grounded theory was used to guide this study as no theory was found in the literature to explain what influences the experiences of medication administration of final year undergraduate nursing students when in the off-campus clinical setting. It has been suggested that grounded theory makes its greatest contribution when used to investigate areas where little research has occurred because it allows the study to be well placed to generate theory grounded in data (Burns & Grove 1995; Chenitz & Swanson 1986; DeLaine 1997).

Approach

Individual in-depth interviews using a semi structured approach were chosen as the primary means of data collection for this study in order to address the research question. Constant comparative analysis was used with open, axial and selective coding (Strauss & Corbin 1998). The use of diagramming and memoing facilitated further analysis of the data. The literature was examined and used in the final stages of analysis when the writing up stage of the study had begun and was used to validate the emerging concepts in the substantive theory.

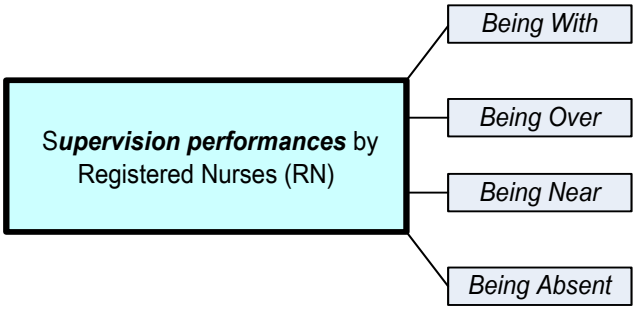
Results

A total of 28 participants were selected for the study using a theoretical sampling approach. The sample included an equal number of school leavers at 17 years and mature age students 41 years and above. This enabled narratives to be gathered from participants with varying life experiences and differing maturity levels. The majority of the participants in this study were female (n=24), with only four males, reflective of the nursing workforce in general. More than half of the participants had prior nursing experience including 39 percent as Assistants in Nursing, 14 percent as Enrolled Nurses, and 7 percent as Carers. This left 39 percent of participants having had no previous nursing experience. The total number of clinical placements that the 28 participants had cumulatively experienced was 84. Of these 41 were different types of organisations. This allowed participants to share experiences from a variety of different clinical contexts ranging from aged, community, and acute care areas. This served to provide a rich tapestry of experiential descriptions.

As the data from each transcript were compared through the process of constant comparative analysis, the discovery of *'supervision'* emerged as a central category. This provided the analytical power to unite two other dominant categories in the substantive theory, the first being *'shifting levels of supervision'*. This was the central issue, the problem that influenced the medication administration experiences of students. It is defined as supervision levels provided or presented by registered nurses to nursing students which move away from the direct, personal

and supportive level that the student understands is required when administering medications. Supervision levels were labelled as *'being with'*, *'being over, 'being near'* and *'being absent'.* See Figure 1.

Figure 1: Levels of supervision performed/provided by the registered nurse



Supervision levels defined

Being with

Being with is defined as a level of supervision where the registered nurse is with the student during the process of medication administration. This level is consistent with what participants understood as being required and as specified in the Health (Drugs and Poisons) Regulation 1996 (Queensland Parliamentary Council 1996). Participants used the words '*with you'* to describe this level of supervision. It involved the registered nurse doing the necessary checks as part of the 'five rights', which enhances student capacity and therefore patient safety. The following demonstrates this.

> 'there are … nurses that'll stand there with you and do those proper checks'. (p. 25)

This level of supervision was considered positive and was characterised by the registered nurse taking their time and using appropriate resources to gain information about the medication during administration. Participants also spoke of the registered nurse at this level as being patient, empathetic and caring. For example:

> There is the RN who is standing there with you … patiently, smile on her face you know, "okay, take your time, do it right", you feel comfortable to do it, take your time and do it right. (p. 1)

Participants wanted to work with this type of registered nurse because the medication administration process was ideal. Participants viewed the registered nurse in this situation as a good role model and someone whom they wanted to be like. Students knew that this was the legally correct method of supervision and provided the ideal learning situation.

> … Those nurses that are brilliant they are sort of an idol like, a role model you want to be them when you become a professional, they may be tough but they are doing it for our sake. (p. 19)

Participants described the *'being with'* level of supervision as occurring along a continuum. This level was more apparent at the outset of their clinical placements but reduced as the placement proceeded. No specific timing was consistent among

participants' stories as to when this ideal supervisory style would fade. This is an area that would benefit from further research. For a small number of participants, *'being with'* occurred throughout the clinical placement but not with every registered nurse or medication episode that they encountered. For the majority, '*being with'* occurred only in the first few days to a week in the placement. The variations are demonstrated by the following.

> … for the first couple of days that I was with each RN, they … kept a good eye on you, and then after that …, they tend to let you just run off and do your own thing. (p. 12)

> Supervision is like, we were doing our three week block and once you've done the first week, the RNs thought it was fine to leave you go around doing the medications yourself. (p. 11)

> They do it, you know, for the first couple of times and then that's it, you know, like oh, you've done it a couple of times, now you're right. (p. 5)

When participants encountered this level of supervision they did not experience conflict. However *'being with'* rarely appeared in the data as occurring for participants for all medication administration episodes. The following supervision levels of '*being over', 'being near'* and *'being absent'* appeared more commonly in the data and it is these levels that caused internal conflict for participants because they moved away from the close, supportive and direct supervision participants sought and knew was legally required. Each will now be explained.

Being over

Participants identified *'being over'* as a level of supervision where the registered nurse was in close contact but stood 'over' them. The approach was often hurried.

> ...a person standing over your shoulder going "this has to be done, now, hurry up" sort of attitude you know. (p. 2)

'Being over' was a level of supervision that met with the university requirements because the registered nurse was in close approximation; however, it was still not considered as ideal due to the non supportive and rushed approach. Additionally participants revealed that at this level they rarely 'looked up' the medications in medication resource manuals (MIMS) because there was not time. This meant that they were unable to gain the necessary information about the medication prior to actually administering. Participants spoke about fearing making a mistake because the registered nurse was not allowing them to move through the steps in medication administration in a methodical and safe way. This level caused internal conflict as participants spoke about having near misses with errors due to being rushed. Even though participants were concerned about this level of supervision they felt as though they had to go along with the nurse.

> You don't, you don't have time to look things up, like … what is this for? What am I giving this for? … and when they're in a rush you feel obliged to just go through and not think, like just let them think for you. (p. 19)

Participants did not portray the registered nurse who provided this level of supervision in a positive light.

> they think of you as someone that's getting in the way and they wish you'd just leave them alone. (p. 15)

The registered nurses were commonly described as 'drilling' and 'impatient' which would cause the participant to feel flustered.

> I get flustered, because if they are there, they're asking you a billion questions, "What's this drug? What's it do? How does it interact? What should you be looking for? What are you supposed to be asking?", and really drilling you and making it really difficult. (p. 20)

Being near

'Being near' was a level of supervision described most commonly by participants to indicate the registered nurse was within visual range when administering medication but not beside them. Participants knew this level did not meet expected standards. In the following excerpt participant one uses the word 'admit' to indicate that they had in the past administered medication with this level of supervision.

> I'll admit to the RNs being at one bed and I've been at the bed beside them, we've both been giving out medications at the same time. But I won't do it if they're not it the room. (p. 1)

This level of supervision occurred most often when the registered nurse was busy. Participants identified this level of supervision as a strategy used so that the RN could get on with other things while still being near them. These other things included attending to other patients, administering medications to other patients or answering call bells.

> You just go through it all, … always with the nurse in the room, usually she's running around busy, whatever, but I always get her to check before I give to the patient and tell her which one's which and how many and go through all the rest. (p. 6)

This level of supervision became more common after participants had been in the clinical placement for some time. Participants felt that this was because the registered nurse had developed trust and confidence in them. Some participants were happy to accept this because they liked the fact that the registered nurse trusted them and had confidence in them. However, others spoke about the fear of being in trouble if they were caught by the university for administering with this level of supervision. Some spoke of mixed feelings which are summed up by participant 13.

> So, she went next door and talked to the patient there and did something with that patient while I was completing this drug, I mean, she wasn't looking directly over me, but … I could see her the whole time. I had no ramifications from doing that, … she was very, very happy just to stay in … the vicinity in my eyesight while I did it. I was quite confident, I knew exactly what I was doing, I felt very comfortable but it was sheerly again, that experience of someone failing for having done something like that. And in the back of my mind all the time when that was happening was, God, if my facilitator walks in and I'm sitting here pumping IVs into this guy, I am going to be dead meat. (p. 13)

Being absent

'Being absent' was when the registered nurse provided no supervision to the student. Participants understood that this level did not meet requirements. It arose most often when participants were left in a waiting situation after the registered nurse had been called away or when they were in a relationship with the registered nurse who had an expectation that as a final year student they should administer alone. The registered nurse's expectations are explained by participant 5.

> … they expect you to know what you're doing, and then they'll just say "oh you go and give the drugs and they'll just walk along behind you half an hour later and countersign." You know, and you're administering drugs … while they're off in the next bay doing something else, they'll say "well, you start here with your administration and I'll meet you halfway." (p. 5)

Absent supervision also emerged in the data as occurring along a continuum. Participants did not describe this type of supervision as occurring at the outset of their clinical placement but rather towards the end.

> … by the time I got to the end of my prac,… I wouldn't be supervised as much, they might come in and come out, if they felt that they need to stay with a patient. (p. 26)

In describing absent supervision, participants spoke about their impression of the registered nurse as someone who did not care or that they were too busy to supervise. In some circumstances participants felt that the registered nurse did not want them there.

> There are nurses that don't care. Like some nurses you get put with, you have to shove the medication under their nose and say, this is 500 mg on such and such, so you know that they aren't checking…they reckon you should be doing it by yourself … They don't have time to check and bother about what you are doing. (p. 19)

Discussion

Shifting levels of supervision as identified has legal implications for the registered nurse. It has the ability to impact patient safety. The concern about inadequate supervision is reinforced by the Institute for Safe Medication Practices (2004). Failure to adequately supervise is considered an example of an at risk behaviour by health care personnel, thus risking patient safety. Additionally, failure to respond to a colleague (which could be said of nurses who do not provide supervision to students after they have sought supervision) is also considered an example of an at risk behaviour (Institute for Safe Medication Practices 2004).

In considering the risky behaviour of registered nurses in providing shifting levels of supervision, a review of the literature was conducted to identify if other research had considered registered nurses' understanding of their responsibilities for supervising students including legislation and how to access the information. The literature lacked any explanation of this. Further, from the researcher's perspective, retrieving documents outlining the registered nurses' responsibility specific to supervising undergraduate nursing students in medication administration was not easy. For example the State Regulatory Authority, the Queensland Nursing Council (QNC), has a policy on medication administration by enrolled nurses (QNC 2005), a policy for enrolled nurses checking medications, (QNC 2005) and a general information sheet to reduce the risk of medication errors (QNC 2005). They clearly explain clinically focused supervision and the two levels being direct and indirect supervision and the registered nurses' responsibilities in delegating activities from a care plan to others in the health care team (QNC 2005). However these documents do not mention undergraduate nursing students or specify what the registered nurse's responsibility is in supervising undergraduate nursing students for medication administration. This leads to the question as to whether registered nurses need information that is clearly obvious and easily retrievable to clarify their responsibilities.

Wright (2005) argues that once final year students are assessed and competent they should be given independence in medication administration. Wright (2005) also suggests that such an approach would allow students to take full responsibility for their actions; would assist them to develop problem solving and decision making skills based on the realistic clinical setting; and would facilitate a smoother transition into the role of the registered nurse (Wright 2005). In response to Wright's (2005) stance, Greenall (2005), a third year nursing student in the United Kingdom, argued that it was both unnecessary and unsafe to expect final year students to administer independently. Greenall (2005) suggested that qualified nurses have had sufficient time to gain the knowledge and experience needed to administer medication safely while under the pressure of the clinical setting, whereas students have not.

This study has raised questions about registered nurses' accountability and responsibility when working with undergraduate nursing students. However there is also the question of where students are legally situated if they are willing to administer medications without supervision. In reviewing professional standard documents in Queensland there was no attention paid to the accountability of the undergraduate nursing student in terms of accepting the delegation of administering medications without supervision. The closest reference relates to the unlicensed health care worker who, like students, are considered unregulated. Unlicensed health care workers (HCWs) are paid employees who carry out non- complex personal care tasks (QNC 2005). The QNC does not determine or regulate their scope of practice but they do stipulate that HCWs must work with the support and supervision of the registered nurse or midwife. In doing so they are accountable for their actions and can only undertake tasks if they are competent and legally authorised to do so (QNC 2005). Additionally the task allocated to them must have been properly delegated (QNC 2005). Undergraduate nursing students differ in two ways. First they can be involved in complex care and second as a student they are not paid employees of the clinical organisation or of the university. Furthermore, a pre registration undergraduate nursing student is generally not called to account for any actions and omissions by the QNC because Council emphasises the responsibility of the registered nurse in delegating tasks from a care plan. While this point reinforces that registered nurses working within Queensland assume significant responsibilities in allowing nursing students to administer medications to a patient without supervision, what remains unclear is what the students' responsibility is in accepting that delegation. Student responsibility and accountability is an area that would benefit from further exploration and development of guidelines that provides clarity to this issue.

Conclusion

Safe medication practice is a responsibility of any nurse who is qualified to administer medications to patients in health care facilities throughout Australia. For undergraduate nursing students who are learning the process of medication administration, the off-campus clinical setting serves as a setting in which they can practice with real patients and real medications. With this comes the reality that they can make medication errors causing patient harm. While learning the process, direct supervision by registered nurses of nursing students administering medications is a legal requirement in Queensland. Despite this, the levels of supervision provided to students is not always the direct and supportive level required. This has implications for patient safety. Universities and health care organisations in which students participate need to examine closely the practices occurring within their facilities. Collaboration between parties should be a priority

to ensure that practice and policies reflect that supervision of students does occur to promote safe medication administration practice.

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