Factors influencing the supervision of nursing students administering medication: The registered nurse perspective

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Summary Administering medication is an important function of registered nurses. It is therefore necessary that nursing students develop knowledge and skill in this field. Given the propensity for, and negative consequences of, medication errors, it is essential that nursing students are properly supervised in this role. There is currently a paucity of research examining the practices of supervising medication administration by nursing students, particularly from the perspectives of registered nurses. The aim of this study was to explore the opinions and insights of registered nurses regarding the supervision of nursing students administering medication. Focus groups were conducted with registered nurses with experience of working with students in the clinical environment. Focus groups were transcribed verbatim and data analysis was conducted using the five stage framework approach. Four main themes were identified that reflected the participants’ views of the factors most strongly influencing the provision of supervision: communication, busyness, attitudes, and pressure to conform. The participants identified the importance of providing student supervision and suggested strategies for improvement, such as a closer working relationship between the clinical facilitator and the registered nurses providing supervision.

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Introduction

The administration of medication is a key responsibility of the registered nurse (Reid-Searl, Moxham, Walker, & Happell, 2008) and is therefore a vital skill that nursing students must acquire prior to graduation. The opportunity to practice this skill in the clinical setting is therefore paramount (Honey & Lim, 2008; Reid-Searl, Moxham, Walker, & Happell, 2010b). While learning opportunities for nursing students is important, this must occur according to processes and procedures that maintain the safety and well being of patients (Reid-Searl, Moxham, Walker, & Happell, 2010). This background section will explore medication administration by nursing students in relation to: the importance of supervision; medication errors; safety and quality care.

Supervision and support is a priority across the board for undergraduate nursing students (Brammer, 2008; Vallant & Neville, 2006; Walcock, 2010). However, in the case of medication administration it is particularly pertinent due to the high risk associated with this procedure (Burgess, 2009; Evans, 2009; Fogarty & McKeon, 2006; Reid-Searl, Moxham, & Happell, 2010). Research findings suggest that one or more medication errors occurs in approximate 2% of admission to Australian hospitals (Runciman, Roughhead, Semple, & Adams, 2003). This figure is likely to underestimate the reality because registered nurses may not report medication errors due to fear of the associated repercussions (Evans, Berry, & Smith, 2006; Fogarty & McKeon, 2006).

Research examining medication errors at the point of administration tends to focus on registered nurses (Burgess, 2009; Evans et al., 2006; Fogarty & McKeon, 2006; Fry & Dacey, 2007; Greenfield, 2007; Harne-Britner, Kreamer, & Frownfelter, 2006; Hodgkinson, Koch, Nay, & Nichols, 2006). However, the involvement of students in medication errors has been identified (Harding & Petrick, 2008; Reid-Searl et al., 2010b; Wolf, Hicks, & Serembus, 2006). In addition to suggesting that medication errors by nursing students are more frequent than anticipated, factors contributing to the errors have been identified. These included knowledge deficits and inexperience (Wolf et al., 2006) and factors within the organisation itself such as busyness (Harding & Petrick, 2008). Adequate supervision by a registered nurse was identified in only one of these studies (Reid-Searl et al., 2010b), even though it would seem to be of great importance in addressing the problems created by knowledge deficits, inexperience and organisational characteristics. The limited discussion about supervision in the literature is somewhat surprising given the legal responsibility registered nurses have for the administration of medication (Queensland Parliamentary Council, 1996).

Supervision was identified as the central category in a grounded theory study of nursing students’ experiences in the administration of medication. The students were aware of both the legal responsibilities of registered nurses and the expectation of the university that they administer medication only when supervised directly and in person by a registered nurse. However, the student participants indicated that direct supervision was frequently not provided (Reid-Searl et al., 2008). They identified the absence of direct supervision as a source of considerable stress (Reid-Searl, Moxham, Walker, & Happell, 2009) and felt torn between the expectations of the university and those of the registered nurses they worked with. Some participants accepted supervision of a lesser standard than required because they feared the repercussions from the registered nurses, particularly as they were responsible for assessing the students as competent or otherwise at the completion of the clinical placement (Reid-Searl, Moxham, Walker, & Happell, 2010d).

Safety and quality of care had been compromised by the lack of adequate supervision, some participants had been involved in a medication error or what they termed as a ‘near miss’ (Reid-Searl, Moxham, & Happell, 2010). Interestingly, the participants adopted certain behaviours in the attempt to receive direct supervision, including negotiating with the registered nurse, chasing or waiting until the required supervision could be provided, and avoiding administering medication with nurses who did not provide direct supervision (Reid-Searl et al., 2010b).

The extent to which registered nurses provided the required degree of supervision was influenced by a number of factors including, the attitudes of registered nurses and their willingness or otherwise to working with students, communication for the university and the busyness of the unit and whether there was adequate time for supervision (Reid-Searl, Moxham, Walker, & Happell, 2010c).

The limited research addressing this topic, suggests that supervision of nursing students administering medication is highly complex and influenced by a number of factors. Harm to patients can result when nursing students administer medications, therefore the lack of research in this area is concerning. As registered nurses are expected to provide this supervision, it is important that their perspective is articulated. In light of this, the aim of the current study is to explore the experiences and opinions of registered nurses who work with undergraduate nursing students in a supervisory capacity.

Methods

Design

Due to the paucity of research in this area, and the intention for an in-depth understanding of registered nurses opinions and experiences, a qualitative exploratory methodology was adopted (Stebbins, 2001). Qualitative exploratory research is an approach that allows participants to contribute their own views and insights with the view to increase the understanding and knowledge of a specific area of nursing practice, in this case the administration of medication.

Participants

This research was conducted in a public health care facility in regional Queensland. Registered nurses who have been involved in the supervision of undergraduate nursing students were sought for participation in the project. Following the recruitment stage 13 nurses were interviewed in one of two focus groups. The participants comprised 12 females and one male from a broad range of specialty areas across
the service including: medical, surgical, accident and emergency mental health, paediatrics and maternity.

Recruitment of participants

The study was advertised by placing flyers on notice boards in the various units of the health service. Those interested in participating were asked to contact the first author. At this point they were provided with more information about the study, given the plain language statement and consent form and advised they could ask any further questions as required. Once the completed consent forms were received the two focus groups were organised around the ability of participants to attend.

Procedure

Two focus groups were conducted in a quite location away from the participants’ workplace to minimise disturbances. Each group was approximately 1 hour duration. Focus groups were selected because they facilitate interaction between participants, enabling each participant to respond to comments made by others, and enable more participants to be interviewed than would be possible if one to one interviews were selected (Curtis & Redmond, 2007; Happell, 2007; Kevern & Webb, 2001). The participants were all invited to contact the researcher if they did not feel able to express their views in the group situation so that an individual interview could be organised. No such contact was made and participants all appeared eager and enthusiastic to engage in discussions.

At the commencement of the focus groups, participants were asked to talk from their experiences in supervising undergraduate nursing students administering medication, with particular reference to supervising these practices and any factors they felt may influence the degree of supervision provided. More defined questions were asked in response to participants’ comments, for example in response to a statement about the culture of the unit being a factor, participants were asked additional questions such as: what do you mean by culture? In what way does this influence the practice of medication administration?

Ethical issues

Before the research commenced, the study received approval from the Human Research and Ethics Committees of both the health service and the university. When the project was discussed with potential participants, they were advised that participation in the project was purely voluntary, and they could decline involvement or withdraw from the research at any stage. Participants were informed that the data collected would be kept in the strictest confidence and no information that could identify participants would be included in any publicly available material. The data files and transcripts have been stored securely according to Ethics Committee requirements.

Data analysis

The focus groups were digitally recorded and transcribed verbatim to provide a full and accurate account of the focus groups. The framework approach developed by Ritchie and Spencer (1994) was used to structure the data analysis process. The authors identified five stages on analysis: familiarisation, identifying a thematic framework, indexing, charting, and mapping and interpretation. At the familiarisation stage the researchers become immersed in the data to enhance their understanding of the content (Pope, Ziebland, & Mays, 2000). This familiarity is used to identifying a thematic framework. Researcher(s) compile a list of the themes identified. During the indexing phase each theme is coded and cross referenced to the relevant section of the transcripts (Pope et al., 2000), and interrelationships between themes begin to emerge (Ritchie & Spencer, 1994). Charting involves the development of a visual organisational structure which reflects themes and sub-themes and helps to identify patterns in the data (Ritchie & Spencer, 1994). In the final stage, researcher(s) analyse the data as a whole and consider it with reference to the research questions that the guided the research (Ritchie & Spencer, 1994). At this time connections between the main themes are identified and refined. Data analysis was conducted independently by two researchers. Once completed they met to compare the themes and adjustments were made to reflect the minor discrepancies between the two results.

Four main themes were identified: communication, busyness, attitudes, and pressure to conform. Once agreement on the themes had been reached, the researchers carefully re-read the transcript to identify quotes that clearly articulated the essence of these themes. This process was conducted independently by the researchers and during subsequent discussion agreement about which quotes to include was reached. Each of these themes will be briefly discussed and illustrated with the use of quotations from the participant. Each participant has been assigned a number 1—13. Using this method enables the participants to be distinguished from one another without the identity of the participants being revealed.

Findings

Communication

Communication between the university and the registered nurses providing supervision was identified as an issue. Participants agreed that information was provided by the university at both the hospital and unit level. However, communication at unit level was also difficult because of staff changes and turnover, as one participant described:

… the chances are that group of nurses don’t pass on that information … and on Monday you’ve got a completely different group of people … how do you communicate through a unit which has got fifty-five staff (P3)?

One participant suggested facilitators attend handovers where possible to communicate with the staff on each shift about students’ capabilities and learning needs:
You’re not necessarily going to get the facilitator to each one [handover], but maybe that facilitator can rotate each day, or at least get to one of them … they’ve also then identified the key person … and given them the little checklist … so remember “we’ve got students, they’re here today, there’s X of them …” (P5).

The facilitator could also remind registered nurses about where students are at in terms of medication administration. This clarification would help to minimise the impact of large numbers of students at different levels and from different institutions, and not knowing what skills the students are able to practice, as one participant stated:

… the [university] students are followed by the TAFE [Technical and Further Education] … followed by somebody else … expectations really need to be clearly spelled out. … Whoever’s going to be working with those students … needs to try and get to the workplace to the areas that they’re going to be in, provide written materials and also some sort of face to face discussion with people … (P7).

Participants often sought clarification from students themselves when they were unsure what they were and were not permitted to do, for example:

… it’s difficult to remember at the time at what stage what student can do what. You rely heavily on them telling you, which is usually correct (P11).

A specific policy about the administration of medication by students was discussed. Some participants would be helpful, some agreed, others felt that verbal communication was an issue that could not be overcome by written documentation. One participant advocated for written policy as a means to enforce the requirement and source additional resources if necessary, as stated:

… the power of a nurse manager is then doubled, because you can refer to the organisational policy … if you’re aware that it’s a recurring issue, then, as a manager, I’d be happy to know that it’s there (P10).

**Busyness**

Busyness was regarded as a major influence over the supervision provided, it could result in absence of adequate supervision or diminished learning opportunities for students:

… the argument from many nurses … [is] it takes so much time to go and spend with them and be there with them. I know I’m meant to do that, but it’s quicker to do it myself (P9).

Participants described being provided with a list outlining the specific skills students are able to practice, but the busyness of the work environment made it difficult to keep track of what specific students were able to do, as one participant explained:

We’ve got a good list of what they can do on our board now for the past few years … when you’ve got first years, third year, whatever you have to stop and think, “are you a third year or a first year?” because there’s nothing really to identify what they are (P13).

Time pressure might also result in the students being supervised in the actual process of administering medication, but receiving limited education about the therapeutic and unwanted effects on the medication. One participant claimed this was particularly apparent in the Emergency Department where nurses access medication from a PIXIS machine [An automated machine that dispenses the dose of medication typed in by the registered nurse. It is accessed via the recognition of the nurse’s finger prints:

… when it’s busy, if somebody’s working at that machine, nobody else can access anything. So you tend to get in, get it [medication] and … you can’t be standing there saying “well this is what this is for etc” … then they’re [students] probably missing out on some of the learning that they need to take on board (P5).

Busyness easily led to distractions. Consequently, the participants identified the need for registered nurses to communicate supervisory requirements to students to avoid them attempting to administer medications unsupervised. One participant provided an example of the potential consequences of distraction:

I had two students … who were … helping me get the medication out. I literally turned to a student who asked me a question and … the other student had taken the medication out, drawn it up and given it to the patient but it was the wrong dose. I was literally standing there with them, but the student was too overzealous … I had that other student standing with me who was distracting me (P7).

**Attitudes to students**

Registered nurses’ attitudes to students were described as variable. Some saw their role as providing a clinical service and did not consider supervision of students as part of that role. One participant described her own ambivalence about working with students:

… I’ve been in the past thinking, “I’m not getting paid to do this. Why should I give up my time for this student nurse and this university and I’m not getting paid for it?” … there are other times when you think, well, they’re our future. We’ve got to … teach them, this is our role (P12).

The attitudes of students towards gaining experience in the administration of medication were described as an important influence over the educational opportunities that developed. On the whole the participants considered the students to have positive attitudes, reflected by an enthusiasm for learning and a willingness to seek more information when required, as one participant described:

… their [students’] background knowledge of the medications is not the greatest … they ask a lot of questions, when it comes to medication … So you can tell that they’re trying to do the right things (P9).
However, some students apparently did not appear to appreciate the potential dangers associated with administering medication, while uncommon these experiences created concern about safety and sometimes influenced the participants’ willingness to supervise medication administration, for example:

... you get occasional ones who don’t really seem to care... about... what could happen if they did do it wrong... because they know you’re in a hurry and they won’t take as much of a precaution as they should (P8).

One the other hand the relationship participants developed with a student over time influenced the supervision they provided, and may mean not insisting on direct supervision if they were confident about the students’ capacity, for example:

...if you have them [students] for two weeks you start to figure how competent they are... and that determines the level of supervision that you start giving them (P11).

**Pressure to conform**

The participants described students as tending to conform to the expectations of registered nurses, rather than challenging practices that they thought were not adequate, as stated:

the students... don’t want to rock the boat... they will most likely fall into line with that person’s practice whether it is what they’ve been taught in the lab at the uni or not... they’re there for however many weeks and they don’t particularly want to rock the boat (P6).

The tendency to conform was strongly influenced by the registered nurses’ role in assessing the student’s competence at the end of the placement, as one participant described:

... if they don’t conform to that they feel that there is a higher risk that they won’t be passing their placement... a lot of the students that we get on our ward are third year students and it’s very stressful for them to think that if they don’t conform then there is a risk of them not passing (P4).

The participants referred to the culture specific units, hospitals and even geographical areas, as having a substantial impact on the procedure for administering medication. One significant influence over the culture of a unit was the number of registered nurses who work there regularly. The presence of high numbers of agency staff, for example, made it difficult to establish clear expectations that students could follow. As the following quote illustrates:

They’re [students] trying to fit in to their environment as well, because they’re not used to that environment, trying to get along with the other nurses, so by doing that they’re wanting to get the work done... so they see another agency nurse in the same environment they just go ”oh that’s how we do it!”... if we’ve got only one [one] nurse that works there regularly and the rest of them are agency or pool staff, they’re not really going to get a good example of what really happens (P2).

Age was identified as an influencing factor, with older students tending to be more to be more prepared, more involved and therefore more likely to be questioning, for example:

... the mature age students that certainly we’ve had on our unit are more likely to be proactive and getting the MIMS... way before the medication are due and looking it up and asking you questions and then being completely prepared and taking a more structured approach (P13).

**Discussion**

Supervising undergraduate nursing students administering medication in the clinical setting has been identified as a complex process, influenced by many factors that need to be addressed in order to maximise safe and quality health care (Reid-Searl, Moxham, & Happell, 2010). However, to date research in this area has been limited, despite awareness of the potential adverse consequences of medication errors (Burgess, 2009; Evans, 2009; Fogarty & McKeon, 2006; Reid-Searl, Moxham, & Happell, 2010; Runciman et al., 2003). Four main themes emerged from this research: communication, busyness, attitudes and pressure to conformity. The importance of these themes in relation to the broader literature will be briefly described.

Communication was identified as crucial in providing registered nurses with information about what students were able to do to ensure safe and effective learning experiences. The importance of communication from the university has been identified for clinical experience in general (Happell, 2009; Levett-Jones, Fahy, Parsons, & Mitchell, 2006; Waldock, 2010), and specifically in relation to the administration of medication (Reid-Searl et al., 2010c). The extent to which communication filters down from management to the registered nurses who would be supervising the students was identified as problematic. This has been previously identified in the literature as a concern (Happell, 2009; Levett-Jones et al., 2006; Reid-Searl et al., 2010c; Waldock, 2010; Wieland, Altmiller, Dorr, & Wolf, 2007), however, the literature to date has been considerably more effective in identifying the problem than in addressing it.

The standard and quality of supervision provided was acknowledged as influenced by the busyness of the clinical setting. The consequences of busyness tended to be either that the student may give the medication without direct supervision or that students were not given the opportunity to practice this skill because of limited time available. Busyness was identified as an influencing factor over supervision in an Australian study exploring students’ views about administration of medication (Reid-Searl et al., 2010c). With busyness comes distractions, identified as a major contributor to medication errors by registered nurses (Brady, Malone, & Fleming, 2009; Conrad, Fields, McNamara, Cone, & Atkins, 2010; Hewitt, 2010; Jones, 2009; Kreckler, Catchpole, Bottomley, Hanta, & McCulloch, 2008; Pape, Guerra, & MuñozQueso, 2005), and students (Wolf et al., 2006; Reid-Searl et al., 2010c). The current findings suggest errors made by nursing students may also be a consequence of the registered nurse becoming distracted and not providing direct supervision.
According to participants, the attitudes of students influenced the level of supervision registered nurses were prepared to provide and their willingness to actively engage in a supervisory role. This is similar to the findings of a qualitative study of nursing students’ experiences when administering medication (Reid-Searl et al., 2010c). Some registered nurses were perceived as not wanting to work with students. The findings of the current study suggest this may not be a purely one way process and places onus on students to present as willing and interested to receive maximum learning opportunities.

For some participants, the supervision was influenced by their opinions of student competency. Nursing students have been found to appreciate the confidence the registered nurses had in their ability and were reluctant to insist on direct supervision when this occurred (Reid-Searl et al., 2010d). While it is normal to make judgements about the competency or otherwise of students, given the current legislative requirements that place the responsibility for students’ administering restricted medications with the registered nurse (Queensland Parliamentary Council, 1996; Reid-Searl et al., 2009), the potential consequences of such decisions needs to be considered.

The participants perceived that students are likely to conform to the expectations of the registered nurses they work with. This supports previous research conducted from the students’ perspective (Reid-Searl et al., 2010c, 2010d). Several participants in this study described a strong desire to do what the registered nurse asked and reluctance to inform the university when supervision was not provided to the level required. The ability of registered nurses to influence academic progress was identified in the current study as increasing the likelihood of student conformity. This is similar to the students’ experiences (Reid-Searl et al., 2010c, 2010d).

Age of students was identified by some participants as important, with older students tending to be more prepared, more willing for learning opportunities and more likely to ask questions of or challenge registered nurses. Age has also been identified as a factor from the student perspective (Reid-Searl et al., 2010b), with younger students identified as more likely to behave in ways that would meet the approval of registered nurses. This finding highlights the need for students, particularly younger ones, to be assisted to develop assertiveness skills so they can become more comfortable in challenging supervisory arrangements that do not meet requirements.

Communication is a long standing problem but one that can be addressed. The suggestion from participants that facilitators attend hand over and maintain more regular contact with registered nurses providing supervision is worthy of further exploration as one strategy to address communication issues. Busyness is more difficult to address, it is widely acknowledged that contemporary nursing roles are extremely busy due to a variety of factors and the need to supervise students, particularly in an area that requires direct supervision can be seen as an additional burden (Carlson, Pilhammar, & Wann-Hansson, 2010; Happell, 2009; Reid-Searl et al., 2010c). However, it is equally important that clinical learning opportunities are maximised for nursing students. Clinical models to best suit student learning in light of prevailing conditions need to be more closely explored.

The assessment of nursing students by clinical staff presents an issue of concern. Avoiding the tendency for students to conform requires that a registered nurse from the health care facility cannot alone determine success or failure for a student. It is an important finding of this research that this perception by students (Reid-Searl et al., 2010c, 2010d) is not unique to them, but is also recognised by registered nurses involved with the supervision of students. Staff employed by the university need to take an active involvement in the clinical assessment of students in partnership with clinicians.

Further research is needed to address the effectiveness of these strategies. Furthermore, research should be conducted to provide a more informed perspective on the relationship between nursing students administering medication and medication errors. Findings from this work would provide a clear focus on student supervision as a quality and safety issue.

Implications for education, practice and research

The importance of a culture that regards direct supervision as important, allows students to feel comfortable in asking questions and challenging practice has been identified in the literature in relation to clinical experience for nurses in a broad sense (Hegge & Larson, 2008; Jimenez, Navia-Osorio, & Diaz, 2010; Standing, 2007; Vallant & Neville, 2006), but is much more limited in relation to the administration of medication. The findings from this research suggest an urgent need to consider medication administration as an urgent priority in clinical education.

Conclusions

While there is an abundance of scholarly literature that articulates the incidence of medication errors and the implications for nursing practice, there has been little focus on the potential of nursing students to also contribute to the possible compromise of patient safety. While it may be assumed that students always receive direct supervision there is some evidence to suggest this is not the case. The findings from the current research study demonstrate the many and complex factors that may directly influence the quality of supervision nursing students receive. Communication, busyness, attitudes and pressure to conform play a major influence. Given the qualitative, exploratory nature of this study, caution is needed in generalising the findings. Nevertheless, this research has identified the need to implement strategies to facilitate patient safety by providing equate supervision to students administering medication in the clinical setting.

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