Nurse Education Today 34 (2014) 899–903

Contents lists available at ScienceDirect

Nurse Education Today

journal homepage: www.elsevier.com/nedt

Evaluation of student nurses' perception of preparedness for oral medication administration in clinical practice: A collaborative study

Christina Aggar [a,1,2], Sonja Dawson [b,*,1]

[a] Sydney Nursing School, University of Sydney, Room A5.04, MO2, NSW 2006, Australia
[b] Faculty of Nursing and Health, Avondale College of Higher Education, 185 Fox Valley Rd, Wahroonga, NSW 2076, Australia

ARTICLE INFO

Article history:
Accepted 30 January 2014

Keywords:
Nursing education
Clinical skills
Oral medication administration
Clinical laboratory
Low fidelity simulation

SUMMARY

Background: Attainment of oral medication administration skills and competency for student nurses is challenging and medication errors are common. The ability of nurses to master a clinical skill is dependent upon educational instruction and practice.
Objectives: The aim of this study was to evaluate nursing students' perception of preparedness for oral medication administration in two practice environments and determine possible relationship between student demographics and their perceived preparedness for oral medication administration.
Design: This was a cross sectional, exploratory study.
Participants: Eighty-eight second year students from a baccalaureate nursing course from two metropolitan Australian tertiary institutions participated.
Methods: Student nurses' perception of preparedness for oral medication administration was measured via a self-administered, adapted, and validated questionnaire.
Results: The overall mean Total Preparedness Score was 86.2 (range 71–102). There was no significant difference for perceived total preparedness to administer oral medications between the two facilities. Whilst there was no significant relationship established between student demographics and their perceived preparedness to administer oral medications, four single questions related to clinical practice were shown to be significant.
Conclusion: Low fidelity simulated teaching environments that incorporate time management and post medication situations, may improve student nurses' perceived preparedness for oral medication administration.

Introduction

It has been identified that student nurses find it difficult to acquire oral medication administration skills to competency (Krautschied et al., 2011) and even after gaining registration, medication errors by health professionals, including nurses, are common (Brady et al., 2009). How students perceive their educational instruction has been significantly associated with their competency to perform clinical skills (Steinert, 2004). In addition, the ability of nurses to master a clinical skill is dependent upon opportunities to practice those skills prior to the evaluation of performance (Benner et al., 2008). The learning environment influences students' approaches to learning. Historically, tertiary teaching of foundational concepts of clinical nursing skills has involved didactic lecture formats, bolstered by tutorial and small group activities and simulated clinical reasoning. Clinical skill acquisition can also involve both learning and practice whilst on a facilitated clinical placement. The process of assessing students for clinical skill competency can vary between institutions (Levett-Jones et al., 2011; Cant et al., 2013).

Student learning in a simulated clinical environment is considered an effective method of teaching administration of oral medication skills in a safe setting and is used in Bachelor of Nursing curriculums throughout Australia (Shearer, 2013). Studies investigating simulated teaching and learning strategies in undergraduate nursing education have reported increased self-efficacy and knowledge related to quality and safety competencies (Piscotty et al., 2011). Enhanced learner behaviours, and a high level of satisfaction and confidence in student perception of skill competency have also been attributed to learning in a simulated clinical environment (Cordeau, 2010; Goldenburg et al., 2005; Sinclair and Ferguson, 2009).

Practicing tasks to competency level in a simulated clinical environment is thought to prepare students for the clinical setting (Edgecombe and Bowden, 2009; Wooley and Jarvis, 2006). Alignment of learning objectives and student expectations with simulation exercises has also assisted in transferring knowledge to practice (Cordeau, 2010). However, there is little empirical evidence to support whether simulation contributes to better preparation for competency to perform oral

* Corresponding author at: Faculty of Nursing and Health, Avondale College of Higher Education, 185 Fox Valley Rd, Wahroonga, NSW 2076, Australia.
E-mail addresses: christina.aggar@sydney.edu.au (C. Aggar), sonja.dawson@avondale.edu.au (S. Dawson).
[1] Equal contributors.
[2] Tel.: +61 2 9114 4191.

http://dx.doi.org/10.1016/j.nedt.2014.01.015
0260-6917/

medication administration (Wellard et al., 2009). Further research is needed to explore the transferability of knowledge and clinical skill competency across different practice settings including simulated clinical learning environments and the clinical setting (Wellard et al., 2009; Ricketts, 2011). Therefore, the aim of this study is twofold:

1. To evaluate student nurses' perception of preparedness for oral medication administration between simulation-based practice and assessment, and clinical placement based practice and assessment.
2. To determine the relationship between student demographics and their perception of preparedness for oral medication administration.

Background

Research studies have frequently identified calculating the amount of medication to be given as an inherent math issue and a major reason for medication error (Reid-Searl et al., 2008; Wright, 2010). However, the process of teaching pharmacology and clinical skill competency surrounding medication administration should also be considered (Holland et al., 2013). Bridging the gap between theory and practice is vitally important in preparing students to safely administer medication without compromising patient care. Numerous studies have sought to rate students' perceptions of preparedness for practice in relation to understanding theory of pharmacology and medication administration (Bullock and Manias, 2002; Latter et al., 2001; Chan, 2003; Papathanasiou et al., 2014). These studies concluded that a review of nursing curricula and reorganisation of the educational framework may improve the knowledge base of nurses in pharmacology, improve their confidence in drug administration and facilitate skills in nurses educating patients about medications.

Godson et al. (2007) and Sandahl (2009) looked at collaborative teaching with peer groups and concluded that involvement by senior peers teaching junior level students increased learning and confidence in the seniors' medication administration skills. Educator demonstration together with adequate opportunities for practice in a simulated environment and appropriately timed feedback improved student nurses' perceptions of effective medication administration education prior to clinical settings (Latter et al., 2000). Sulosaari et al. (2012) identified several factors associated with student nurses' medication competence, including individual nursing student demographics (age, educational background, learning strategy, effective use of self-directed learning time, previous proficiency in mathematics and confidence) as well as clinical learning environments.

There is no standardised method for assessing competency of safe medication administration in nursing education (Gonzales, 2012). Whilst several studies have assessed competency of clinical nursing skills there is little measurement or differentiation to determine whether learning to gain competency was attributed to simulated clinical environments or practice within clinical settings (Chan, 2002, 2003; Fisher and Parolin, 2000; Gonzol and Newby, 2013; Papp et al., 2003). Henderson et al. (2013) reviewed six studies related to student nurses' perceptions of learning in different practice settings and found that students reported that clinical learning environments were most conducive to promoting safe practice. Conversely, they found that learning environments were not tailored to individual learning needs, and they did not distinguish between learning and teaching strategies of skill acquisition by practice in a simulated clinical environment or whilst on clinical placement in the real world setting.

Based on conclusions of these studies, and the lack of published data pertaining to students' perception of preparedness for oral medication administration competency further research is warranted.

The research questions guiding this study were:

1. Does practice in a simulated clinical environment or whilst on a clinical placement in a real world setting impact on student nurses' perception of preparedness for oral medication administration competency?
2. Is there any relationship between student background demographics and student nurses' perception of preparedness for oral medication administration competency?

Method

This cross sectional, exploratory study examined the perception of preparedness to competently administer oral medication of student nurses' from two educational facilities who received parallel oral medication administration educational instruction, but different approaches to clinical skill practice and competency assessment.

Ethical approval was sought and granted from the appropriate Human Ethics Research Committees of both institutions.

Students from two tertiary teaching institutions in the second year of their 3-year baccalaureate nursing program were invited to participate. The study was advertised in their respective classes and placed on their student electronic notice boards 1 week prior to the distribution of the survey. The students at both facilities had been educated and evaluated on medication administration competencies in their second semester of their first year of study. Whilst both cohorts received similar educational instruction, the facilities had different approaches to skills practice for competency assessment of oral medication administration. The study was conducted in the classroom environment. Student nurses indicating an interest in the study were provided with an information sheet outlining the research project and given the opportunity to ask any further questions. Students then willing to participate were provided the research questionnaire to complete in their own time. Return of the questionnaire implied consent. A clearly marked and secure receptacle was provided to collect completed surveys at both campuses. Questionnaires were anonymous and had no bearing on their assessment results.

Students at both facilities received a 2-hour lecture on medication administration including safe handling, legislation, policy and procedures, followed by a 3-hour clinical laboratory session. The clinical skill laboratory (CSL) session included written material outlining the steps required for safe oral medication and a short video (10–15 min) demonstrating oral medication administration. The remaining laboratory session was conducted in a controlled, simulated environment and involved students watching a demonstration of oral medication administration at competency level by the nurse educator. Students were provided with a case scenario, including medication administration records, doctor orders and patient assessment data and plan and were required to administer a range of oral medications. The student nurses were then instructed to practice the skill in the simulated environment and encouraged to repeat the skill until they felt confident that they had achieved the learning outcomes. During this session the student nurses were assisted by nurse educators on a similar ratio of approximately 15:1 to integrate their knowledge and practice. Both learning environments included the use of low fidelity manikins in the clinical skills laboratory, along with resources such as medication charts and medications in authentic packaging. These correlated with the correct documentation of the medication orders. Following this instructional phase, the two facilities differed in their approach to clinical skills practice and competency assessment for oral medication administration. Facility A nursing students continued to practice in a simulated clinical environment until competency was tested and achieved. Facility B students practiced oral medication administration in actual clinical settings, where competency was eventually assessed. Competency assessment at both facilities entailed an educator observing the student nurse administering an oral medication using a standardised checklist to cover all aspects of the process. The student was deemed competent and safe if all steps were correctly covered. If students at Faculty A failed to meet competency they were required to continue practicing in the simulated environment under supervision and resit the competency assessment prior to clinical placement. At Faculty B where competency was assessed in the clinical setting, the educator intervened if there