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Evidence of clinical competence by simulation, a hermeneutical observational study

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SUMMARY

Making the transition from theory to practise easier in nursing education through simulation is widely implemented all over the world, and there is research evidence of the positive effects of simulation. The pre-understanding for this study is based on a definition of clinical competence as encountering, knowing, performing, maturing and developing, and the hypothesis is that these categories should appear in simulated situations. The aim of the study was to explore the forms and expressions of clinical competence in simulated situations and furthermore to explore if and how clinical competence could be developed by simulation.

An observational hermeneutic study with a hypothetic-deductive approach was used in 18 simulated situations with 39 bachelor degree nursing students. In the situations, the scenarios, the actors and the plots were described. The story told was "the way from suffering to health" in which three main plots emerged. The first was, doing as performing and knowing, which took the shape of knowing what to do, acting responsibly, using evidence and equipment, appearing confident and feeling comfortable, and sharing work and information with others. The second was, being as encountering the patient, which took the shape of being there for him/her and confirming by listening and answering. The third plot was becoming as maturing and developing which took the shape of learning in co-operation with other students. All the deductive categories, shapes and expressions appeared as dialectic patterns having their negative counterparts.

The study showed that clinical competence can be made evident and developed by simulation and that the challenge is in encountering the patient and his/her suffering.

Introduction

In nursing education there is an ongoing transition from traditional teaching and learning to more self-directed learning due to the development of the Internet, learning platforms and new technology. Using high-fidelity simulators offers students effective, holistic and active learning (Cook et al. 2013, Schmidt et al. 2011, Murphy et al. 2011), and enables them to experience a variety of realistic situations in safe environments without jeopardizing patient safety. Simulation has become a way to enhance and consolidate learning, since it allows multiple learning objectives to be achieved simultaneously (Yeun et al. 2014), and it has a clear impact on students' clinical competence (Gordon et al. 2009, Ironside et al. 2009, Gallo et al. 2014). The traditional teacher role changes to that of a facilitator who provides the students with the possibilities to learn. Since recent studies show that there is no single teaching method that secures clinical competence and safe practise (Cook et al., 2013, White et al. 2013), there is a need to find valid methods to evaluate simulation and its effect on clinical competence and how it transfers to practise.

The Patient Safety Strategy (WHO 2004) together with the complex and demanding nursing reality has brought simulation to nursing education. This article continues the ongoing discussion about the use of simulation to enhance clinical competence and presents one hermeneutical observation study of second-year bachelor degree nursing students in one university of applied sciences in Finland which is engaged in simulation training.

Background

Simulation Developing and Providing Evidence of Clinical Competence

Simulation is rooted in Aristotle and Socrates and in experiential learning (Lyons 2012). Mechanical dummies, and models for arms and legs have been used to train and demonstrate clinical competence, and previously role play, case studies and using study mates as patients

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in clinical scenarios were common. Computer-assisted simulation was introduced in the 1980s (Nehring & Lashley 2009, Khalaila 2014), and its benefits in teaching and in learning important nursing skills are widely recognised (Solnick & Weiss 2007, Cant & Cooper 2010, Stanford 2010, Yuan et al. 2011, Rochester et al., 2012, Skrable & Fitzsimons 2014). Simulation requires a paradigm shift from teaching to learning, stressing teamwork and co-operation. The shift from passive, receptive and content-driven learning to dynamic, active and reflective learning affects identity construction and professionalism (Berragan 2011).

Simulation or scenario learning combines acting and real life. Simulation has the features of a play, as it follows a script; there is a cast, different roles and even costumes, and the performances in the scenarios are referred to in a dramaturgical language (Taylor 2014). At the same time, simulation brings real life into realistic learning environments, by offering authentic learning experiences and by providing possibilities for the students to reflect upon and develop their clinical competence (Hinchcliffe, 2014). Defining the objectives and the stages of the learning process is reminiscent of the action-based learning cycle of Kolb (Kolb & Kolb 2005), where reflection follows every stage of learning, as every simulation is followed by a debriefing (Levett-Jones & Lapkin 2014).

Simulation offers safe training of skills, problem solving, critical thinking, decision making, communication, and group- and teamwork (Robinson-Smith et al. 2009, Burns et al. 2010, Alfes 2011, Garrett et al. 2011). The emotional aspect of encountering patients and the affective component of learning are still hard to achieve (McCaughey & Traynor 2010, Berragan 2011, McGarry et al. 2014), but considering these limitations, simulation can be used as a substitute for clinical work practise placements by offering students equal possibilities to learn (Khalaila 2014). Training in safe environments develops self-confidence, decreases anxiety when encountering real patients, enhances competence and makes students better prepared for clinical practise (McCallum 2007, Gordon & Buckley 2009, Roberts et al. 2009, Kameg et al. 2010, Yuan et al. 2011, Jensen 2012, McGarth et al. 2012, Reid-Searl et al. 2012, Thomas & Mackey 2012). Simulation can be used in nursing education at all levels, e.g. by varying the aims so more advanced students can develop prioritising and delegating skills, whilst beginners can concentrate on simple scenarios (Kaplan & Ura 2010, Pearson & McLafferty 2011, Tosterud et al. 2013).

Evidence of Clinical Competence

A recent concept analysis of nursing competence by Smith (2012) shows what is needed when entering nursing practise, and the results are highly relevant for definitions of clinical competence. Smith summarises nursing competence as motivation, including integrating knowledge into practise, experience, critical thinking skills, caring, communication, supportive environment and professionalism including confidence, safe practise and holistic care. Clinical competence is similarly defined as the application of skills in all domains of the practise role, a combination of knowledge, and skills and attitudes basic for emotionally intelligent nursing, which grow and deepen with experience from different contexts (Meretoja et al. 2004, Tilley 2008, Cassidy 2009). In these contexts, clinical competence needs to be demonstrated and made visible. The competence needs to become evident, which means it becomes clear, obvious and indisputable (Scott & McSherry 2008, Eriksson 2010). In being evident, students combine scientific knowledge and skills based on values and caring ethics (Avis & Freshwater 2006).

Evidence implies students' seeing and understanding what the patient needs, knowing how to meet those needs, expressing and performing, and when required revising their actions (Eriksson 2010).

The Study

Aim

In an earlier empirical inductive study which asked third-year bachelor nursing students ($n = 21$), preceptors ($n = 21$) and nursing teachers ($n = 9$) to define clinical competence, the responses revealed that in practise such competence comprises encountering, knowing, performing, maturing and developing/improving. Competence could be seen both as a stage and as an ongoing process, comprising an ontological (general) and contextual dimension (Lejonqvist et al. 2011).

From this pre-understanding, and viewing each simulated situation as a play, the aim of this study was to explore the forms and expressions of clinical competence in contextual simulated situations, and furthermore to find out how clinical competence could be developed by simulation.

The study posed the following questions:

-How are encountering, knowing, performing, maturing and developing shaped and made evident in simulated situations?

-Can clinical competence be facilitated by simulation?

Design

An observational hermeneutic study was used, inspired by Gadamer (1996), with a hypothetico-deductive approach. In this study, the method was used with meaningful material and actions (Føllesdal 1994). The pre-understanding – viewing clinical competence as encountering, knowing, performing, maturing and developing – is based on earlier empirical research (Lejonqvist et al. 2011) and formed the deductive categories for the analyses. Understanding proceeded hypothetico-deductively. Understanding is based on rational assumptions or quoting Gadamer; “agreement is the basis for understanding” (1996). Simulation learning and performing have many parallels (Taylor 2014), the situations were viewed as scenarios/plays, which allowed the researcher to look at them from outside in, as watching a theatre play. The play was allowed to absorb the researcher so it was apprehended as reality. Neither the actors nor the observer existed, only what was played out, the meaning. Through deduction, the evidence (what was known) became visible. (Gadamer 1996, Eriksson et al. 2010). The situations were video-taped and could be watched again and again until everything was unfolded, or quoting Ödman (1979) “the interpreted had been given a meaning”.

Sample and Data Collection

The sample comprised all 47 second year bachelor degree nursing students from a university of applied sciences in Helsinki. The students had previously been in simulation to demonstrate their basic clinical competence. They were now preparing for medical and surgical practise. For the simulation, the students were divided into four groups and the time span was 4 days, each group participating for 1 day. Three students were absent and two of the recordings failed ($n = 39$). The situations were videotaped with the equipment normally used in the simulation centre. The recorded situations numbered 18 over 4 days in February 2012, lasting a total of 4 h and 25 min. The students entered the stage in pairs (10 times) and 3 at a time (8 times). Each situation lasted for 10–19 min, on average 15 min, and the situations were all stopped by the two teachers responsible for the simulation. The debriefing sessions after each situation lasted an average of 20 min, but these sessions were not part of the analysed material.

Ethical Considerations

The WMA Declaration of Helsinki (2013) and the ethical procedures required by the university were followed, and the research was approved by the ethical board. Each student was informed about the aim