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Original research

Nursing students' evaluation of a new feedback and reflection tool for use in high-fidelity simulation – Formative assessment of clinical skills. A descriptive quantitative research design

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ABSTRACT

Clinical skills training is an important part of nurses' education programmes. Clinical skills are complex. A common understanding of what characterizes clinical skills and learning outcomes needs to be established. The aim of the study was to develop and evaluate a new reflection and feedback tool for formative assessment. The study has a descriptive quantitative design. 129 students participated who were at the end of the first year of a Bachelor degree in nursing. After highfidelity simulation, data were collected using a questionnaire with 19 closed-ended and 2 open-ended questions. The tool stimulated peer assessment, and enabled students to be more thorough in what to assess as an observer in clinical skills. The tool provided a structure for selfassessment and made visible items that are important to be aware of in clinical skills.

Conclusions: This article adds to simulation literature and provides a tool that is useful in enhancing peer learning, which is essential for nurses in practice. The tool has potential for enabling students to learn about reflection and developing skills for guiding others in practice after they have graduated.

1. Introduction

Graduate nurses show a lack of expertise in clinical skills (Bradshaw and Merriman, 2008; Higgins et al., 2010). There is a need for major education changes to enable nursing students to meet future healthcare challenges (Benner et al., 2009), for which the requisite specialization and expertise are constantly changing, and a person-centred perspective in nursing is expected (Mccormack and Mccance, 2010).

Clinical skills are complex. They involve the ability to perform an action with care based on theoretical and practical knowledge, communication skills, and ethical and moral considerations tailored to the individual patient's needs (Bjørk, 1999; Ministry of Education, 2008). This article will focus on clinical skills training in a clinical skill. The learning takes place in small groups guided by different teachers. In our education programme at University College of Southeast Norway (HSN), we saw that a common understanding of learning outcomes and clinical skills' characteristics optimizes learning. This clarification was important for both students and teachers. Nicol and Macfarlane-Dick (2009) argue that to be successful in formative assessment and promoting student learning in higher education, a robust conceptual framework and principles of good feedback practice must underpin students' clinical skills. To learn the complexities of a clinical skill, all the individual aspects of the skill need to be identified and made visible to students and teachers (Hattie, 2012).

1.1. Visible learning

Teaching occurs when teachers see learning through students' eyes and help them become their own teachers. As a facilitator, the teacher needs to have a clear idea about the effect of their teaching. Almost all teaching interventions provide a learning effect, but a review of educational interventions show that some are more productive than others are. Factors that are expected to have the

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most influence on learning are students' own perception of their performance level, teacher's credibility, formative or process evaluations, class discussion, teacher clarity and feedback (Hattie, 2012). Learning occurs within the students' proximal zone of learning (Vygotskij et al., 2001). Feedback supports the students' performance at the expected level, and enhances their positive learning experience. Visible learning means an enhanced role for teachers because they become evaluators of their own teaching.

Formative assessment is the ongoing process between the teacher and the individual student in which the teacher supports the student in helping them assess where they are in the learning process (Hattie, 2012). Through working with self-assessment, the participants gain insight into their own learning needs (Hattie and Timperley, 2007).

Effective feedback must answer three questions for either students or teacher (Hattie and Timperley, 2007). The first question is "Where am I going?". This involves clarifying what is the goal of learning, including coping criteria and objectives. The second aspect is "How am I going?". This involves formative feedback related to start and end points focusing on mastery criteria. The third aspect is "Where to next?". This is feed-forward feedback for the next step in learning.

1.2. Tools for learning and assessing clinical skills

A number of assessment tools are used in medicine and nursing education for evaluating procedures (Bjørk, 1999; Kneebone et al., 2008; Harder, 2010; Mckinley et al., 2008; Hegland et al., 2017). In our background research, we found that none of these tools covered the complexity of theoretical and practical knowledge, communication skills, and ethical and moral considerations in holistic and person-centred care for clinical skills training during the first year of the nursing bachelor programme. Therefore, we saw the need to develop a new feedback and reflection tool for formative assessment of clinical skills.

The two aims of the study were: 1. To develop a tool for formative assessment with structured concepts for excellent practice of clinical skills to enhance students' learning process. 2. To evaluate use of the formative assessment tool during clinical skills training using high-fidelity simulation (HFS).

2. Method

2.1. Study design

The study used a descriptive quantitative research design. Students evaluated the usefulness of the new Competence-development of Practical Procedures (COPP), a formative assessment tool to help them develop their practical holistic competence and person-centred care skills. The COPP tool was introduced to students during high-fidelity simulation.

2.2. Development of the instrument – COPP as a reflection and feedback tool

COPP was developed as a generic assessment tool for feedback and reflection, which is applicable to many clinical skills. It is intended to help students in their formative assessment and reflection on themselves and their peers before, during, and after learning clinical skills. In COPP goals and learning outcomes for clinical skills are specified.

COPP is divided into three parts (Appendix 1). The first part shows the expected competence for the performance of practical skills based on updated guidelines for healthcare workers (Cappelen Damm, 2017; Gyldendal Academic, 2017) and is divided into three main areas with subcategories related to updated guidelines: 1) Preparation and planning; 2) Performance; and 3) Supplementary work. The first part "Preparation and planning", is inspired by the model of practical skill performance (PSP) (Bjørk, 1999; Bjørk et al., 2013), which was developed as a formative assessment model for facilitation and learning in practice. This model specifies six categories of competence for practical skills: 1) Substance, referring to the inclusion of relevant content in the form of movement steps; 2) Sequence, the logical order of a skill; 3) Accuracy, being accurate and precise; 4) Fluency, a customized pace and rhythm in the execution of a skill; 5) Integration of timing and co-ordination, overview and flexibility; and 6) Caring comportment, which implies aspects of communication and interpersonal relationships.

The model is viewed as highly applicable in the planning of learning situations as well as during practice, performance and formative assessment of clinical skills learning (Nielsen et al., 2013). The model also helps to highlight the complexity of mastering practical skills, helps to sequence a learning process that can support the novice student, and contributes to more nuanced feedback.

The second part, called "Overall assessment", is inspired by the model Practical Skill Performance (Bjørk, 1999) categories, "fluency" and "caring comportment", and person-centred nursing framework (Mccormack and Mccance, 2010).

The third part of COPP is the "Knowledge of clinical skill". This part is divided into five subcategories that are important for students to learn: "Indication/purpose of the procedure", "Complications that may arise", "Observations", "Documentation" and "Ethical challenges". This part "Knowledge of clinical skill" is closely related to the digital learning platform, practical procedures in the nursing service (Cappelen Damm, 2017), nursing handbook (Gyldendal Academic, 2017) and student syllabus. In this paper, evaluation of part one and part two are presented as these parts concerned all students.

COPP includes three columns to check, "Excellent completed", "Partially completed" and "Missing", and a fourth column for writing additional comments. Teachers can use COPP as a structure for debriefing, and students and peers can use it for reflection after a simulation.

2.3. Setting

The simulation included various levels of low- and medium-fidelity simulation, such as task trainers, computer games and standardized patients, and high-fidelity simulation with scenarios built into the computerized manikins using psychological responses (Bradley, 2006; Harder, 2010). Using a simulation to learn clinical skills creates a safe learning environment where students can learn and prepare for practice by experiencing several simulations that mimic real-world situations (Hegland et al., 2017; Topping et al., 2015). One important aspect of the simulation is debriefing through guided reflection (Cant and Cooper, 2011; Topping et al., 2015).

Four simulation scenario cases were published in the students' curriculum at the start of the semester. Students were encouraged to prepare for these cases in study groups beforehand. Earlier in the semester, students had practiced these clinical skills using low-simulation fidelity. Students were introduced to COPP as a tool on the same day as the high-fidelity simulation. Simulation sessions had a fixed format (Table 1), with 55 min for each scenario. The patient was a computerized simulation manikin able to communicate via the voice of one of the teachers.