

Reflective debriefing to promote novice nurses' clinical judgment after high-fidelity clinical simulation: A pilot test

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Abstract

Background: Novice nurses are increasingly beginning their career paths in critical care areas, where they are expected to care for patients whose lives are potentially threatened. They are unable to benefit from years of experience to facilitate their clinical decisions. Reflection after simulation could possibly improve nurses' clinical judgment in complex situations.

Design: An educational project was conducted to pilot-test a teaching intervention, which combined reflective debriefing with a simulated critical care experience.

Method: Five nurses beginning in an intensive care unit participated in the pilot test. Their perception of their learning and satisfaction with the reflective debriefing and the simulation were collected using open-ended questionnaires. A clinical nurse educator, a faculty member and the first author participated in a

group discussion to review the time plan and the affective components of the teaching intervention.

Results: Participants reported that the reflective debriefing helped them understand their cognitive processes during the simulation and contributed to clinical judgment development and to their care prioritization and assessment capacities. Observers reported the time plan was adequate and that attention to participants' negative feelings was necessary.

Conclusion: The results of this pilot test provide preliminary information that reflective debriefing may be a safe and potentially effective way for novice critical care nurses to learn from a clinical experience and enhance clinical judgment.

Key words: clinical judgment, clinical reasoning, reflection, debriefing, high-fidelity clinical simulation, critical care

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Background

As a result of the nursing shortage in Quebec, hiring criteria based on work experience are less stringent in the critical care units (St-Pierre, Alderson, & St-Jean, 2010) and this is where an increasing number of newly graduated nurses are beginning their careers (Marleau, 2012). This translates into less nursing expertise at the bedside caring for patients with life-threatening conditions (Hardin & Kaplow, 2005). These novice nurses might sometimes unintentionally miss significant changes in a patient's condition (Levett-Jones et al., 2010; O'Neill, Dluhy, & Chin, 2005; Simmons, 2010). Failure to recognize a deteriorating patient may delay communication with appropriate health professionals and response to a critical health condition (Beaumont, Luettel, & Thomson, 2008; Clarke & Aiken, 2003). Furthermore, death from complications in the hospital setting within 30 days of admission, labelled "failure to rescue" (Clarke & Aiken, 2003), has been linked to nursing staff characteristics, such as education level and experience (Aiken, Clarke, Cheung, Sloane, & Silber, 2003; Needleman, Buerhaus, Mattke, Stewart, & Zelevinsky, 2001).

The capacity to recognize early signs of deterioration in a patient's condition would be one feature of safe clinical judgment (Hardin & Kaplow, 2005). Expert nurses, through years of clinical practice, develop a sense of what is most salient in a patient situation, which allows an intuitive response (Benner, 1984; Benner, Sutphen, Leonard, & Day, 2010; Rew, 2000;

Tanner, 2006). However, a serious question regarding patient safety is raised if inexperienced nurses, who are prone to miss significant signs of deterioration, manage their care.

Therefore, nursing education, at the entry-to-practice and continuing levels, is faced with the imperative to develop teaching strategies that promote the development of clinical judgment. In this paper, the authors report on an educational innovation with the goal to assist in the development of clinical judgment among novice nurses in a critical care setting. To achieve this, a teaching intervention combining high-fidelity simulation (HFS) and reflective debriefing was developed and pilot-tested.

Literature review

Clinical judgment

Simmons (2010) defined clinical reasoning as a "complex cognitive process that uses formal and informal thinking strategies to gather and analyse patient information, evaluate the significance of this information and weigh alternative actions" (p. 1155). Tanner (2006), in a model based on a substantial review of the literature, defined the result of this cognitive process, the clinical judgment, as "an interpretation or conclusion about a patient's needs, concerns, or health problems, and/or the decision to take action (or not), use or modify standard approaches, or improvise new ones as deemed appropriate by the patient's response" (p. 204).

In the clinical judgment model (Tanner, 2006) nurses' knowledge and values have a major influence on their clinical decision-making. They notice changes worthy of attention in patients' conditions when they compare their perception of unique experiences with their expectations of similar situations drawn on experiential and formal knowledge. Then, they interpret and understand data collected through a variety of cognitive processes, from analytical to intuitive. This leads them to identify actions to be taken to respond appropriately, according to their value of what is "good" or desirable in the situation. Reflection is embedded in the whole process, as Tanner (2006) argues that reflection-in-action brings nurses to adapt their interventions to patients' responses and reflection-on-action "contributes to their ongoing clinical knowledge development and their capacity for clinical judgment in future situations" (Tanner, 2006, p. 209).

The concept of reflection can be traced to Dewey (1910). Dewey defined reflective thought as an "active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusions to which it tend" (Dewey, 1910, p. 6). Schön (1984) is mostly responsible for professionals' interest in reflection. In his seminal work, he stated that tacit knowledge embedded in practice could be elucidated through critical examination of knowledge and feelings. Therefore, as professional practitioners undergo this kind of cognitive exercise, their practice would improve. The process is based on changing individuals' habits of expectation to develop mindfulness and more accurate perceptions of situations (Mezirow, 1991).

In the educational context, reflection and reflective practice are used as learning tools. Ruth-Sadh (2004) identified several outcomes of reflection. According to studies that she analyzed, reflective educational strategies had a positive impact on self-esteem (Johns, 1995) and self-awareness (Bonde, 1998). Most importantly in our case, nurses and nursing students learned from experience (Atkins & Murphy, 1993), integrated theoretical concepts in their practice (Davies, 1995; Scanlan, Care, & Udod, 2002; Wong et al., 1997) and could enhance their critical thinking and judgment making (Brookfield, 2000; Coombs, 2001; Smith, 1998) along with their clinical knowledge (Glaze, 2001; Hyrkas, Tarkka, & Paunonen-Ilmonen, 2001; Paget, 2001).

In order to provide guidance on reflection for nursing students, Nielsen, Stragnell and Jester (2007) developed a "Guide for Reflection", which consists of a list of questions that address clinical experiences through Tanner's (2006) model. Although these questions focus on the process of clinical judgment, they also attend to emotions, as a fundamental aspect of reflection (Johns, 2010). Only one paper was found reporting the use of the Guide as a basis for journal writing on a clinical experience in an American university (Lasater & Nielsen, 2009). Students and faculty members who used the Guide described positive outcomes, such as learning from experience and developing confidence. Therefore, we believed it could be used as a reflective tool for debriefing after a simulated experience.

Debriefing

Few researchers have evaluated debriefing strategies after HFS, both from nursing (Neill & Wotton, 2011) and medical (Fanning & Gaba, 2007) disciplines. Although literature on this topic is scarce, some key points have emerged. First, experts agree that debriefing is the most important element of HFS (Issenberg, McGaghie, Petrusa, Lee Gordon, & Scalese, 2005). Shinnick, Woo, Horwich and Steadman (2011) reported that learners' ($N=162$) exposure to a simulated learning experience would only increase clinical knowledge when they were exposed to a guided reflective debriefing. Whereas Buckley and Gordon (2011) reported that participants ($N=38$) rated debriefing as the most useful aspect of simulation training to improve their ability to recognize an unstable patient and respond in a systematic way.

Second, there is interest in the literature on the necessity to structure debriefing sessions. Neill and Wotton (2011) found that, even in the absence of evidence, nurse researchers (Brackenberg, 2004; Decker, 2007; Dreifuers, 2009, 2010; Kuiper, Heinrich, Matthias, Graham, & Bell-Kotwall, 2008) tend to promote structured debriefings, as they might be more effective for students' learning. Of these studies, Kuiper et al. (2008) proposed reflection based on a theory of clinical reasoning (Pesut & Herman, 1998), but they did not clearly report the effect reflection had on clinical reasoning. Dreifuers (2010) reported a significant difference in the improvement on the Health Sciences Reasoning Test (HSRT), a clinical reasoning score, when comparing students who were exposed to a reflective debriefing based on learning theories and students who experienced traditional debriefing, which consists of questions addressing clinical knowledge ($N=238$ students).

Third, debriefing should last at least two to three times longer than the clinical scenario (Waxman, 2010). As discussed by Neill and Wotton (2011), shorter debriefing of 10 or 20 minutes has been found to be unsatisfactory for participants (Childs & Sepples, 2006; Wotton, Davis, Button, & Kelton, 2010). Wotton et al. (2010) and Cantrell (2008) found that learners usually prefer the debriefing to occur immediately after the scenario.

Fourth, the affective component of debriefing must not be overlooked. Establishing a climate of trust seems to be an essential role of the debriefing's facilitator (Fanning & Gaba, 2007; Neill & Wotton, 2011; Waxman, 2010; Wickers, 2010). Dreifuers (2009) also noted the emotional response of participants as potentially influential on learning and suggested to allow some time to discuss their feelings as part of the debriefing.

These key points need to be considered with caution, since most studies did not isolate the debriefing from the simulation experience, which makes it difficult to conclude a direct relation between results and the debriefing process. Moreover, most researchers did not describe the methods used for their debriefing, nor were standardized methods used, which makes it difficult to compare results. More research focusing on debriefing methodology and outcomes is required.

Purpose

The purpose of this pilot was to test a teaching intervention combining HFS and reflective debriefing.

Method

This project focused on participants' and educators' perception of the teaching intervention. Immediately after the pilot test, participants completed an open-ended questionnaire, with items such as "What did you learn today?", "What did you like the most/least about the activity?" and "How did this activity contribute to the development of your clinical judgment?" Two observers were present during the pilot test: the clinical nurse educator on the targeted intensive care unit (ICU) and a faculty member. They were asked to evaluate the adequacy of the time plan and to pay attention to affective components of the activity. This was discussed and reviewed as a group after the participants left. The discussion was recorded for further analysis and the questionnaires were compiled and analyzed.

Sample

A convenience sample of five nurses who were about to finish their orientation program in an ICU in a francophone teaching hospital were recruited for this project. The orientation program consisted of 100 hours of traditional classes introducing essential notions of critical care nursing (e.g., hemodynamics, shock, common surgeries) and 60 hours of preceptorship in patient care. This unit was selected because the unit's nurse educator had shown interest in the project as an upgrade to the orientation program.

The authors approached each potential participant who was part of the orientation program to explain the project. All of them agreed to participate and gave consent for the use of their questionnaire answers to document their perception of the activity. They were told they had the right to withdraw at any time during the pilot test. Participants' data were kept confidential; the questionnaire was anonymous. Scientific approval was provided by a faculty committee and the project was presented to the institutional ethical review board of our university, which confirmed that it did not require ethics approval.

Procedure

The teaching intervention combining HFS of 45 minutes with a period of reflection (90 minutes) inspired by Nielsen, Stragnell and Jester's work (2007) was developed. Since this activity was to conclude the novice nurse's orientation program, it was conceived as an integrative exercise focusing on their learning needs.

Simulation. Neurosurgery and cardiac monitoring were identified as the main themes for the simulation, since nurse preceptors reported that they were the most problematic for trainees on the targeted unit. Consequently, using a high-fidelity patient simulator, a scenario was developed where a patient with a known neurological issue would undergo a cardiac complication. A patient chart was created and all necessary equipment was available so the simulation would reach an optimal level of realism.

During the HFS, participants had to manage care of a simulated patient who had just undergone surgical clipping of a cerebral aneurysm. As he was admitted to the ICU, participants had to conduct a nursing assessment and to manage cardiac

monitoring and other devices. In the beginning of the scenario, the patient did not experience any particular complications. Next, the patient developed atrial fibrillation, which would lead to chest discomfort and a slight drop in blood pressure. Participants were expected to recognize, analyze and intervene with these changes. They were required to communicate with other health professionals to obtain assistance in preserving cerebral perfusion, with treatments such as antidysrhythmic medications and fluid administration. Eventually the heart rate would accelerate and cause a significant drop in arterial blood pressure and an altered level of consciousness. Following the physician's order, participants were required to convert the dysrhythmia to normal sinus rhythm using electrical cardioversion. The clinical simulation ended with the patient regaining consciousness after stabilization of his vital signs.

Debriefing. Since learning occurs when one compares his or her perceptions with those of his or her peers (Lasnier, 2000), the authors decided that debriefing would occur as a group with all participants ($N=5$). The Guide for Reflection (Nielsen et al., 2007), originally designed for an individual nursing experience, was adapted so it could be used in a group setting. Most questions were left as is, except those addressing previous experiences with the patient and family, which were not consistent with the scenario. The questionnaire was translated into French, respecting the vocabulary chosen by the original authors and then revised by two faculty members, to ensure the essence of the reflective process had been preserved. Subsequently, a diagram was created for this project representing the Guide (see Figure 1), so it could be distributed to participants in a more appealing visual format for future use in clinical practice. In this paper, the diagram is presented as an illustration of the reflective process used in the pilot test.

Pilot test. On the day of the pilot test, participants were welcomed, the schedule was explained and they were introduced to the high-fidelity patient simulator, since it was their first contact with such mannequins. The first author, being a faculty educator, acted as the facilitator during the teaching intervention and explained the objectives of the session, which were to gain insight into and to improve their nursing thinking process through a simulated clinical experience combined with reflective debriefing. Then, the HFS began, with the facilitator limiting his interaction in the participants' interventions to a succinct explanation on how to operate the defibrillator, as they showed poor understanding of the device even though it was explained during the orientation program. The HFS ended with the improvement of the patient's condition.

After a short break, the faculty educator facilitated debriefing with all participants. Through group discussion, participants assessed their clinical reasoning and clinical judgment process according to the adapted Guide for Reflection. The diagram representing the Guide was also used to help the participants analyze their own cognitive processes with respect to the main concepts of Tanner's (2006) model.

As depicted in the diagram, the reflection began with consideration of the context (the dashed line) and the influences of emotions, the nursing role, previous experiences and formal

knowledge. Attendance to these components was meant to show how participants' characteristics, as unique persons with different backgrounds and reactions to a situation, and the context of the simulated situation interacted to influence outcomes. Then, the nursing situation was described thoroughly and the participants were asked to reflect on what they noticed as important, how they interpreted it and to which conclusions it led them. Then, their group response and the way they adjusted to the reactions of the patient and colleagues were addressed (reflection-in-action). It is essential to note that questions and themes in the Guide were used as a flexible structure for the debriefing, and not asked systematically, as a formal questionnaire. Moreover, the educator's role was to guide the reflection with questions, and not to answer for the participants.

Results

Participants reported that reflection contributed to their care prioritization and organization, their nursing assessment capacities, and their global clinical judgment in the situation. They indicated that debriefing helped them understand how they reached a decision regarding the patient's situation. The debriefing was perceived to be a useful exercise to connect theory and practice. They also thought the reflective debriefing led them to evaluate their psychomotor and cognitive performances and to identify creative solutions to improve their skills, particularly communication.

Observers reported that the teaching intervention was an excellent integrative exercise for novice critical care nurses, as it demanded a great variety of skills and knowledge. The reflective debriefing was an opportunity for trainees to gain deeper insight and analyse their thinking process, as they were faced with a complex nursing situation.

Time allotted for all parts of the activity (45 minutes simulation and 90 minutes debriefing) was found to be sufficient. As for the debriefing, the authors believe that shortening the period of discussion would have resulted in a superficial consideration of experience, which would have been inadequate for the purposes of the activity. Furthermore, the timing of the debriefing, which was conducted immediately after the HFS, was considered ideal, both by participants and observers. The observers and the facilitator reviewed the affective component of the debriefing. They found an array of negative feelings experienced by participants, which will be further discussed in the next section.

Discussion

The activity combined a HFS with reflective debriefing focusing on clinical judgment. The goal of this activity was for participants to gain a reflective insight into their thinking process so it could be assessed and improved. Through a group analysis of their experience, they had to reflect on their thoughts and actions, according to a theoretical model of clinical judgment.

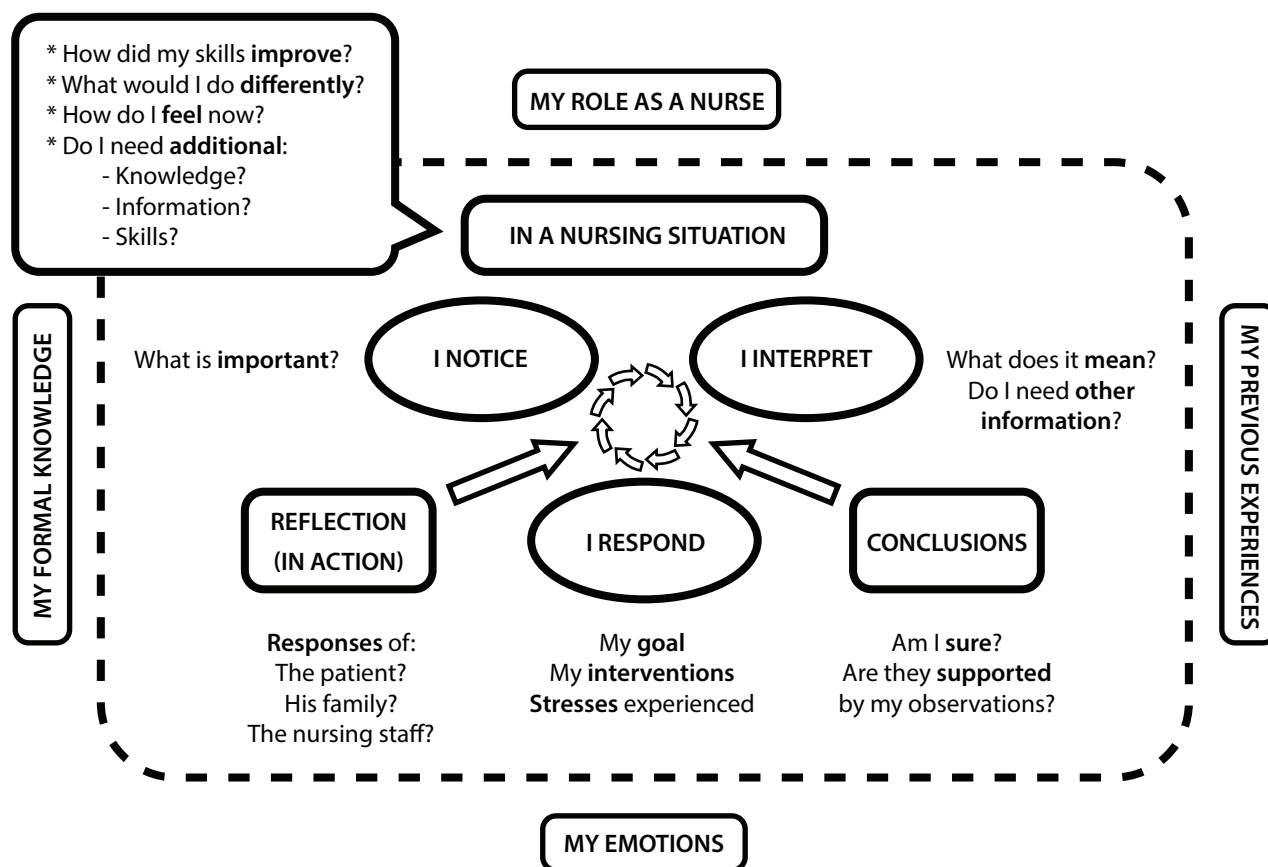


Figure 1: Diagram Representing the Adapted Reflective Debriefing (inspired by Nielsen et al., 2007)

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According to participants' and observers' perceptions, the goal of the combined teaching intervention was reached. Even though the sample was small and the tool used for evaluation was not validated, the authors found preliminary perceptions of participants to be sufficiently meaningful to believe that this type of reflection after HFS should be studied in future research.

As the reflective debriefing was structured along Tanner's (2006) model of clinical judgment, the emphasis was placed on the act of noticing, interpreting and responding in a simulated clinical situation. Throughout the discussion, significance of the concepts presented in the model emerged, and it was easier to link practice to theory. By comparing their thoughts, participants reached a point where concepts proposed by Tanner (2006) made sense and were linked to elements of the experience they just lived. Critical consideration of their thoughts in a group was a positive experience for most as it allowed new perspectives to emerge.

Immediately after the simulation, every learner, as the quality of his/her performance was not as high as he/she expected, expressed a sense of failure. The presence of those emotions created a difficult climate where learning could be impeded. Therefore, the facilitator decided to probe more deeply into what the participants felt for 15 minutes. This time has been found to be particularly helpful, as the participants' expression of negative feelings helped them deal with their subjective perception of their performance. This aside, they were more inclined to examine their cognitive process. The facilitator reported that he felt the affective debriefing had been an effective intervention to develop a trusting environment. The occurrence of this phenomenon brought the authors to believe that a consideration of the affective component of simulated experience should always be planned and conducted.

It was also important to ensure that the skills solicited by the clinical simulation were appropriate for the participants' level of knowledge and capacities. Hence, this enables nurses to evaluate the development of their knowledge and to identify a need for further work in some areas. This was found to be greatly useful, as trainees returned to their ICU and consciously took the appropriate measures to overcome their difficulties.

Future Considerations

The authors believe that this type of debriefing could potentially be integrated into other types of simulated clinical scenarios related to critical care or in other domains of nursing. As the nursing thinking process described by Tanner (2006) can apply to all nursing specializations, no particular adaptation is needed before the tool described in this article can be used in other settings. Other specializations could possibly see positive effects of structured reflective debriefing, as clinical judgment is not exclusive to critical care. Therefore, the reflective debriefing was integrated to various HFS in clinical courses (critical care, surgery and nursing assessment) of a nursing baccalaureate program. Further research is planned to explore how and why this debriefing works.

Nevertheless, clinical reasoning and clinical judgment are as hard to assess as they are to define. These results should be accepted with caution, as this was only a pilot and needs to be evaluated with a larger sample and with tools that have been validated. There is no evidence that this intervention allowed participants to transfer learning in the clinical setting or that it had positive effects on patient outcomes. Greater levels of evidence are needed to justify the development of such resource-consuming strategies using costly technologies and a great amount of time with small groups. Therefore, it is imperative that nursing education researchers concentrate their efforts to develop approaches to study and evaluate teaching interventions targeting clinical reasoning and clinical judgment.

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