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Comparison of Simulation Debriefing Methods

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KEYWORDS

debriefing;
knowledge;
simulation;
skills;
video

Abstract

Background: Debriefing following clinical nursing simulation plays a critical role in student learning. Methods of debriefing include verbal feedback or video-assisted verbal discussion that allows reflection-on-action and should immediately follow the simulation exercise to assist the students in assessing their performance.

Methods: A comparative, crossover design was used. Students in an undergraduate critical care course were randomly divided into two groups. Both groups participated in a standardized simulation, and then one group received only verbal debriefing (V) and the other received video-assisted verbal debriefing (VA+V). Outcomes measured included quality of student skills (assessment and psychomotor), skills response time, and knowledge retention.

Results: Quality of skill improvement was higher and response times were faster for students in the VA+V group (time to initiate cardiopulmonary resuscitation, time to shock, and time to resuscitation). Higher knowledge retention was seen in the V group.

Conclusions: VA+V positively affects nursing skills and response times. Knowledge retention was more positively affected by V.

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In nursing education today, clinical simulations using a high-fidelity human simulator have been incorporated into many educational programs. Teaching with a high-fidelity human simulator can reinforce psychomotor and critical decision-making skills. Student engagement in a simulation scenario should be immediately followed by a debriefing session that is a verbal discussion facilitated by an educator and with possible audiotape or videotape augmentation (Cantrell, 2008). The primary purpose of debriefing is to reinforce learning objectives and critique performance in an objective, nonjudgmental atmosphere

for the purpose of learning. The debriefing portion of a simulation exercise targets student reflective thinking through guided discussion. The educator focuses on the learning outcomes of the simulation in order to guide teaching of best clinical nursing practice.

Background

Simulation as a teaching strategy incorporates two of the seven principles for good practice in undergraduate education proposed by Chickering and Gamson (1987). These two strategies are active learning and prompt feedback, both of which can improve learning and ultimately learning

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satisfaction. There is a common belief among educators that the reflective learning gained in the debriefing phase following a simulation exercise contributes greatly to student learning (Cantrell, 2008; Cato & Murray, 2010; Katz, Peifer, & Armstrong, 2010). Jeffries (2007) describes debriefing as

the time, immediately following the simulation, when students and faculty engage in a reflective-thinking session to examine what happened and what was learned. It is a time for learners to objectively evaluate behaviors outside the emotional or stressful clinical event. It has been the authors' experience that the most common or traditional approach to debriefing is verbal discussion led by an educator. Less commonly, video-assisted verbal debriefing (VA+V) may also be used as a teaching tool. VA+V method incorporates video playback of portions of the simulation session and verbal discussion. VA+V adds the beneficial

Key Points

- The debriefing phase of simulation learning plays an important role in nursing education.
- For many students, viewing their own simulation video replay piques their interest, engages them and can contribute to higher learning.
- The extra time, equipment, and effort needed to implement video-assisted debriefing may prove worthwhile in teaching nursing student assessment and psychomotor skills.

component of visual reinforcement to the experience but also requires more time and equipment to implement. This type of debriefing occurs in a room separate from the simulation. Research studies evaluating differences in the effectiveness of verbal debriefing only (V) and VA+V, including the optimal debriefing length and time after simulation, are lacking.

Review of Literature

Establishing best practices in nursing education and examining student learning outcomes are priorities in the use of simulation. Some empirical support exists for the effective use of video as a teaching strategy. There is a paucity of studies scrutinizing the effect of video-assisted debriefing as an alternative teaching strategy. Studies that have examined the benefits of VA+V have focused on student communication, psychomotor skills, stress, and decision making (Chau, Chang, Lee, Ip, Lee, & Wootton, 2001; Graf, 1993; Matthews & Viens, 1988; Winters, Hauck, Riggs, Clawson, & Collins, 2003).

Students have identified that debriefing is most valuable when it is structured and occurs at the end of the simulation (Cantrell, 2008). Jeffries and Rizzolo (2006) reported the use of 20-minute debriefing sessions following a 20-minute simulation experience in a large-scale study conducted by the National League for Nursing and Laerdal from 2003

to 2006. While this time frame was suggested, the optimum time frame for the debriefing phase is not yet known.

Other health care disciplines have investigated the use of video as a teaching tool. In medical education, video has been used with medical students to improve interviewing skills (Quirk & Babineau, 1982) and to improve history taking, interpersonal skills, and self-assessment (Lane & Gottlieb, 2004). Ellis, Lerner, Jehle, Romano, and Siffring (1999) cited the problems associated with videotaping trauma resuscitations and found that "the lack of staff support was the biggest problem" and that "videotaping was an effective performance improvement tool" (p. 597). Video has been used as a teaching strategy to evaluate verbal communication techniques in occupational therapy (Liu, Schneider, & Miyazaki, 1997), psychology (Baum & Gray, 1992), and physical education (Ignico, 1995). Ellett and Smith (1975) found that student self-analysis assisted by video replay was an effective way to modify education students' classroom teaching.

Purpose

The purpose of this pilot study was to evaluate the effect of two different debriefing styles on quality of student skills (assessment and psychomotor), skills response time, and knowledge retention in senior-level critical care students engaged in a cardiopulmonary arrest (CPA) simulation.

Research Questions

1. During a repeat CPA simulation, what similarities or differences exist in quality of skills (assessment and psychomotor) between students who received VA+V and students who received V?
2. During a repeat CPA simulation, will skill response time change for students who received VA+V compared with skill response time of students who received V?
3. What similarities or differences exist in knowledge retention after 1 week for students who received VA+V following a CPA simulation compared with students who received V?

Methods

Design

A comparative and crossover design was used to evaluate whether quality and efficiency of skills and knowledge retention differ between nursing students who received different styles of debriefing after a CPA simulation. The study design is summarized in Figure 1.

For this study, a high-fidelity human simulator (Laerdal's SimMan[®]) was programmed to mimic a ventricular

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