

Chapter 7

Simulation Followed by a Reflection and Feedback Session in Medical Education

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ABSTRACT

This research study examines surgical residents' perception of their learning after participation in a simulation followed by a reflection and feedback session. Eight first-year surgical residents participated in this study. A survey was administered prior their participation in the simulation, and individual interviews were conducted with all participants after the reflection and feedback session. Results of this study indicated that surgical residents make connections between prior knowledge and experiences while engaged in actions during the simulation and upon reflection after the simulation. Also, three areas of perceived learning were identified: (1) dealing with complexity; (2) dealing with distractions; and, (3) improvement of teamwork skills. The residents indicated that they were able to learn new strategies to address these complexities, distractions and improve teamwork for future, similar situations.

INTRODUCTION

In the past decade, medical educators have integrated simulations into medical school curricula as well as intern and resident education. Simulations are designed to imitate some or all characteristics

of a task or procedure (e.g., an emergency situation) and to allow medical students and novice practitioners the opportunity to experience the complexity of professional practice situations. The realism of the medical cases that are presented during simulations can positively affect medical students' and residents' understandings about case problems as well as enhance their clinical skills

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and performance (Kneebone, 2003; Munz et al., 2004; Schwid et al., 2001; Schijven et al., 2005). Through the use of simulations, medical students and residents have the opportunity to engage in hands-on experiences and practice a set of specific knowledge and skills without potentially endangering patients (Hayden & Panacek, 1999; Kneebone, 2003; Ziv et al., 2003), especially when it involves high-risk procedures (Vozenilek et al., 2004). Loughran (2002) stated that the development of knowledge and skills through hands-on experience helps medical students and residents to incorporate theory and practice. Kneebone (2003) pointed out that simulations can be customized to meet the needs of individual practitioners so that they can practice specific parts of a procedure or whole procedures as often as necessary in a safe environment. Thus, they can learn from their own mistakes to hopefully improve their performance in similar, future situations (Gaba, 2000). Maran and Glavin (2003) maintained that simulations are not intended to replace learning processes in clinical environments involving real patients (i.e., clinical rotations). Rather, their purpose is to provide a safe environment for practice in order to enhance the preparation of medical practitioners before they apply their knowledge and skills to real patients.

Even though the opportunity to learn through simulations has been deemed important for medical education (Kneebone, 2003; Ziv, et al., 2003), the actions taken during the simulation themselves may not always help medical practitioners establish connections between their prior knowledge and skills and the actions in which they are engaged. Dewey (1933) argued that even though experiences are the basis of learning, learning itself could not take a place without engaging in reflection. Schön (1983, 1987) introduced reflective practice theory that was developed based on Dewey's (1933, 1938) learning theory. According to Schön (1983, 1987), when practitioners reflect about their actions, either while they are occurring or in retrospect, they are more likely

to modify their actions based on reasoning and problem-solving. He distinguished between two types of reflection: (1) reflection-in-action; and, (2) reflection-on-action. Reflection-in-action is drawing upon individual knowledge and understandings as one a current situation are addressed. It usually arises when something unexpected happens that causes the individual to question how the unexpected occurred and how it might be resolved. Reflection-on-action is thinking back on actions to understand how tacit knowledge might have contributed to the action that was taken to resolve the unexpected occurrence; and to identify needed areas of learning to more effectively address the unexpected when it occurs in future, similar situations. Further, Schön (1987) suggested the benefits of a "reflective practicum" as a setting in which a practice could be learned. Simulations, as found in medical education, can provide a reflective practicum when the opportunity to engage in reflection-on-action is coupled with the simulation. The ability to engage in reflection after a simulation can encourage medical practitioners to draw upon their prior knowledge, skills and experiences, connect them with the current situation, and then determine the effectiveness of their actions and areas of needed improvement. Furthermore, feedback from experienced practitioners can help novice practitioners identify solutions to problems experienced during a simulation.

An interest in the process of reflective practice has resulted in researchers and practitioners investigating the concept and exploring ways to implement reflective practice in various professional areas such as medicine (Guest, et al., 2001; Mamede & Schmidt, 2004, 2005). Guest, et al. (2001) stated that the ability to perform reflection and learn from the experience is necessary for professionals in the health fields. Furthermore, Mamede and Schmidt (2004) maintained that medical practitioners who constantly reflect on their professional activities are likely to serve patients better as compared to practitioners who did not engage in reflection. Despite this interest,

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