



Contents lists available at ScienceDirect

Teaching and Learning in Nursing

journal homepage: www.jtln.org

Readiness for interprofessional learning after participation in an obstetric simulation[☆]

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ARTICLE INFO

Available online xxxx

Keywords:

Interprofessional education

Obstetrics

Simulation

Nursing education

ABSTRACT

Purpose: The importance of interprofessional education (IPE) is widely documented yet remains underutilized in clinical education. The purpose of this study is to determine student readiness for continued IPE after engaging in an obstetric simulation.

Methodology: A pre/postsurvey with a descriptive design was implemented.

Results: Students were very positive about IPE even before the simulation. Students who did not initially view IPE favorably had a significant increase in readiness for IPE after the simulation experience.

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Introduction

Educational strategies to improve teamwork and communication are widely documented in the literature but remain underutilized in clinical education. Different health care disciplines, such as medicine and nursing, may work in close physical proximity without frequent and meaningful interaction (Bae, Nikolaev, Seo, & Castner, 2015; Ceravolo, Schwartz, Foltz-Ramos, & Castner, 2012). Interprofessional simulation experiences are a strategy to prepare learners for the realities of a complex and interdependent health care environment. The concern from nursing faculty is whether student learners are prepared for this type of learning activity. The purpose of this study is to determine student learner readiness for continued interprofessional learning after engaging in an interprofessional obstetric simulation. The specific research questions are the following: Does an obstetric interprofessional education (IPE) simulation improve student perception of teamwork and collaboration? and Does an obstetric interprofessional collaborative simulation heighten learner perception of personal professional identity in the interdisciplinary team?

Background

Nurses and physicians are traditionally educated in discipline-specific schools. Developing skill in teamwork and team communications is

essential for safe practice and quality care (Liaw, Siau, Zhou, & Lau, 2014). Seventy percent of health care errors are rooted in teamwork and communication breakdown (Zhang, Miller, Volkman, Meza, & Jones, 2015). In the obstetric setting, a lack of health care team communication and teamwork failure may have catastrophic consequences. The occurrence of a sentinel event derived from poor communication is 10% higher in a perinatal care setting than a medical–surgical environment (Gardner, Walzer, Simon, & Raemer, 2008; Goffman, Colleen, & Bernstein, 2013). Although the Institute of Medicine urges the development and implementation of IPE models in an effort to reduce errors and improve patient safety, the majority of health care education occurs in silos (Alinier et al., 2014).

IPE “occurs when two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes” (WHO, 2010). IPE simulation is a safe credible way to practice team skills (Clark, Fisher, Arafah, & Druzin, 2010). The understanding of professional roles and attitudes derived from IPE simulation can improve student communication and collaboration skills. Improving understanding of the interdependent nature of roles and the knowledge unique to each discipline can be achieved during an IPE simulation experience. IPE simulation has been used in undergraduate and graduate educational programs and multiple health care settings including obstetrics, medical–surgical practice, emergency room, anesthesia, the operating room, and intensive care units (Alinier et al., 2014; Clark et al., 2010; Gardner et al., 2008; Robertson et al., 2009; Weller, Barrow, & Gasquoin, 2011). Multiple research studies report an increase in student confidence, knowledge, leadership, teamwork, and communication skills after an IPE simulation (Alinier et al., 2014; Gough, Hellaby, Jones & MacKinnon, 2012; Hood et al., 2014; Weller et al., 2011).

[☆] There was no funding for this project.

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Table 1
Scenario objectives and descriptions

Simulation objective	Simulation scenario	Triggers	Participants
Team works together to determine the maternal–fetal status and successfully deliver the fetus.	G2P1 woman desiring a natural childbirth with a terminal deceleration just prior to delivery.	<ul style="list-style-type: none"> • Requests nonpharmacological pain relief • Expresses grief and anger that her husband is deployed and not present at the birth. • Patient demands explanation of her baby's status during the terminal deceleration. • Feels pressure when fully dilated. 	<ul style="list-style-type: none"> • 2 nursing students(A and B) • 1 medical student or resident
Team works together to identify and manage the postpartum hemorrhage.	Mother is transferred to postpartum care. Initially she is stable then starts bleeding, rapidly deteriorating into a postpartum hemorrhage.	<ul style="list-style-type: none"> • When initially stable, the students are able to complete a postpartum assessment. • Mother is still alone requiring physical and emotional support. • Bleeding occurs; patient becomes dizzy and feels wet “down there” if students do not initially recognize the delivery. • Mother stabilizes once the team recognizes and treats the postpartum hemorrhage. 	<ul style="list-style-type: none"> • 2 nursing students (C & D) who receive intraprofessional hand-off from Labor and Delivery nursing students (A and B) • 1 medical student or resident (same for both parts of the scenario)

It is unclear how many schools actually engage in IPE simulation and if students are truly eager for this educational change (Zhang et al., 2011). According to adult learning theory, students in higher education must be motivated by educational activities designed to transform them into their respective professional roles. Knowledge able to be immediately applied to solving real-life problems is an effective educational strategy for adult learners (Merriam & Bierema, 2014). The first step in adult learning theory stresses the importance of assessing the adult student need and readiness for learning. Evidence of learner readiness to engage in IPE is necessary prior to implementing widespread curricular change (Knowles, Holton, & Swanson, 2015). This article reports the findings of a study to determine student readiness for continued interprofessional learning after engaging in an IPE obstetric simulation.

Methods

A descriptive study using a pre/postsimulation survey was implemented. The study protocol was approved by the university's Institutional Review Board.

The Readiness of Health Care Students for Interprofessional Learning Survey (RIPLS), created by Parsell and Bligh (1999), was used to measure student readiness, or student beliefs, about shared learning. The RIPLS is an 18-item survey with a 5-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). Initially developed using eight health care disciplines, RIPLS underwent additional testing with over 1,000 students from five disciplines to confirm content and construct validity (Parsell & Bligh, 1999). For the purposes of this study, two RIPLS subscales were utilized to measure teamwork/collaboration and professional identity. The RIPLS has been used in multiple research studies measuring the readiness for IPE of learners. The RIPLS has demonstrated acceptable reliability, with an overall Cronbach's $\alpha = .91$, and validity with subscales determined by acceptable loadings on factor analysis (McFadyen et al., 2005; Parsell & Bligh, 1999).

Participants

The IPE simulation was developed between the school of nursing and the school of medicine and biomedical sciences. Participants included nursing students enrolled in their maternal–newborn rotation, third and fourth year medical students, and first year family practice residents. After obtaining verbal consent, students voluntarily completed pre- and postquestionnaires. The presimulation questionnaire was administered at the simulation center before beginning the orientation and the postsimulation questionnaire was administered immediately after the debriefing process concluded. One

hundred eight-four subjects submitted completed pre- and posttest RIPLS surveys. Students selected a unique identifier to link their pre/postsurveys. As an educational evaluation, names, discipline, and demographics were not collected.

Setting

The IPE simulation took place at the university's simulation center. A clinical labor and delivery setting was replicated. The NOELLE Garmaud™ obstetric simulator was used in the scenario. Simulation debriefing using videotaping occurred in the center's debriefing room.

Interventions

A birth and postpartum simulation scenario was developed jointly with expert faculty from the school of nursing, school of medicine and biomedical sciences, and from the university's simulation center. Although the obstetric scenarios were constructed to follow real-life clinical practice, the focus of this simulation was learner teamwork and communication.

Process

Scenario objectives and description are located in Table 1. Debriefing occurs immediately after the scenario is complete and includes all members of the care team. A simulation education specialist leads the debriefing with content expert input from medicine and nursing. Video footage of the scenarios are viewed during the debriefing to highlight example areas for improvement in teamwork and communication and illustrate effective team skills employed during the simulation. Critical debriefing aspects include nurse-to-nurse report, nurse-to-physician report, team members' communication with the patient, and the team's ability to provide care during a critical event. Methods to improve team communication, such as the structured communication tool “Situation, Background, Assessment, and Recommendations” (SBAR), are included in debriefing process. SBAR has been shown to improve communication, teamwork, and the safety climate (Beckett & Kipnis, 2009). All nursing student learners involved in this study have been taught SBAR as a component of didactic coursework presentation; however, these learners are new to using this technique in a clinical setting. The nursing students in this research project have completed one nursing-only simulation and basic medical–surgical clinical experience prior to participating in this IPE simulation. Medical students and residents had varied backgrounds as far as SBAR training and IPE simulations.

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