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SIMBASE – Simulation Based Learning and How It Develops the Efficiency of Healthcare Centers by Using the ICT Method of a European Project

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Abstract

In the field of education there is a need for paradigm change. We need to know what opportunities we have for formal and informal education and learning. The Bologna, LLP and Copenhagen directives serve this purpose. There is a need for interdisciplinary knowledge, such as: computer skills, digital literacy, and foreign languages. ***Methods****: Seven countries participated in this research. A retrospective and comparative analytical approach was used. After the literature review and lessons will be offered a model of impact assessment and a guide for policymakers. Used a piloting design for each training period and a first draft impact assessment model.* ***Results****: The goal of our research was to explore what types of skills are being developed by different learning methods that are useful for the future career.* ***Discussion****: Simulating patients through role playing between learners and educators is commonly used in medical and nursing education. Physical assessment skills and communication techniques are often taught using student pairs. Trained simulated patients can be used to model medical interactions so learners can practice appropriate response/actions. SBL provides a dual role by allowing students to refine their patient examination techniques with the SBL model while receiving real-time feedback about the patient's safety.* ***Conclusions****: By alloying the methodical tools of traditional learning and SBL, the output goals of SBL will be measureable more significantly in the students' clinical practice. In order to move more swiftly towards the proper use of simulation technology and, in general, maximizing the efficiency of training it is essential to establish a close collaboration between different actors and countries.*

Background

Evidence supporting the use of patient simulation in nursing education. An integrative review of medical and nursing literature was conducted by Ravert[2] in an attempt to identify quantitative studies related to computer-based simulation in health care education and to determine the effect of simulation on learning. Nine studies out of 513 references met the inclusion criteria; five were conducted in medical schools with medical students and four were done by registered nurses using samples of nurses. Seventy-five percent of the studies indicated positive effects of simulation on knowledge acquisition and/or skills training. Evidence in the literature related to the use of patient simulation in nursing education and practice is ever increasing, although still sparse in comparison to the medical literature. The majority of articles in the nursing literature are descriptions of how patient simulation is utilized in a particular setting. There is a definite paucity in actual research studies that have been conducted about patient simulation. The first reports of patient simulation in nursing education describe its use with nurse anesthesia students [3, 5, 7]. Incorporation of the human patient simulator into nurse practitioner and clinical nurse specialist education programs occurred somewhat

later and is described in articles by Hravnak, Tuite, and Baldiserri[4], and Scherer, Bruce, Graves, and Erdley[6].

Discussion

Promoting safety through education with the patient simulator. Patient safety is a multidimensional concept that is central to clinical education. Numerous aspects and principles of patient safety can be easily incorporated into education of nurses and nursing students using the patient simulator. This discussion will focus on four primary areas: preventing medication errors, developing critical thinking and clinical decision-making skills, promoting effective communication, and encouraging teamwork.

Preventing Medication Errors -The 2006 IOM report, Preventing Medication Errors, concludes that at least 1.5 million preventable medication errors occur each year in the United States. (This number does not take into consideration the errors of omission.) The USA report indicates that, on average, a hospitalized patient is subjected to more than one medication error each day [9].

Developing Critical -Thinking and Clinical Decision-making Skills-Nursing educators are challenged to teach students to think critically, to go beyond simply "knowing," to advance to synthesis and application of knowledge as they assess, plan, implement, and evaluate nursing care. Simulation provides an alternative to the traditional teacher-centered approach to nursing education with emphasis on the learning needs and preferences of contemporary nursing students. Simulated learning experiences with the patient simulator allow faculty to expose students to situations that they may never see in their clinical practicum experiences [1]. Because students are placed in a variety of units for their clinical experiences, there is a lack of consistency in learning opportunities across and among students. Use of the patient simulator enables faculty to provide structured simulation lab experiences instead of trying to find appropriate and/or rare patient care opportunities in a health care setting [10].

Promoting Effective Communication -The overwhelming majority of untoward events occurring in health care settings involve miscommunication. The Joint Commission identifies communication as the root cause of approximately 70 percent of all sentinel events [8]. Effective communication and teamwork are fundamental to quality patient care. According to the Joint Commission, patient safety is improved when communication is clear, accurate, complete, and timely. The significance of the quality of communication among team members is emphasized by the Joint Commission in one of its National Patient Safety Goals for 2007: "To improve the effectiveness of communication among caregivers."[8]. Because errors often occur during times of patient transition in health care settings, the Joint Commission specifies that facilities must "implement a standardized approach to handoff communications, including an opportunity to ask and respond to questions"[8]. Communication is an essential component of all health care curricula; however, interdisciplinary communication is typically the focus. Each discipline has its own terminology, expectations, and idiosyncrasies relative to communication, all of which can impact the effectiveness of communication across disciplines [14]. Because health care involves multiple disciplines, a means of standardized interdisciplinary communication is needed to enhance quality of care and promote patient safety. A recently proposed model of interdisciplinary communication, known as SBAR, is gaining increased attention. This is a shared model for standardized communication designed to facilitate and improve communication between and among health care personnel. SBAR can be applied to both verbal and written communication. The model consists of four components: **S**ituation—statement of what is happening at the present time that has triggered the SBAR

Background—information that puts the situation into context and explains the circumstances that have lead to the situation

Assessment—statement of the communicator's ideas about the problem

Recommendation—statement of what should be done to correct the problem, by when, and by whom [13]. Patient care scenarios using the human patient simulator provide an opportune way to teach students to effectively use a standardized communication method such as SBAR and to allow them to practice this technique. With minimal effort, SBAR can be added to each simulation, requiring practitioners at all levels to develop and refine their communication techniques to be more effective. Ideally, students representing various health care disciplines can work together in patient care simulations, practicing communication techniques that are representative of the actual health care setting.

Encouraging Teamwork - Simulation emphasizes the importance of teamwork in providing care for patients. It allows the learner to practice as a team member. Working in small groups with the simulator, students may be assigned specific roles such as primary nurse, secondary nurse, medication nurse, communicator, or recorder. They learn how to delegate tasks appropriately, to follow directions, and to communicate effectively with nurses and other practitioners. The simulation allows learners to assess the patient and the situation, identifying pertinent information that must be communicated to the primary health care provider. Students determine appropriate nursing interventions and implement orders from the health care provider [14]. They evaluate patient responses and the outcomes of their assessments and interventions to prepare practitioners to work as effective team members, educational programs for all health care personnel need to increase opportunities to work in interdisciplinary teams [11]. Simulation can be used to train individuals in the context of team activities, creating a more realistic clinical environment. Ostergaard and associates 19 state that simulation is the preferred educational strategy to teach teamwork skills such as leadership, communication, and cooperation. Students from several disciplines such as nursing, medicine, respiratory therapy, pharmacy, and social work can be brought together in a patient simulation scenario. This allows each learner to practice their patient care role and relate in real time to the other professionals with whom they will need to work to effectively provide safe and quality patient care. Johnson [12] states that CRM (Crew Resource Management) or team training needs to be introduced early and reinforced often. He further acknowledges that accomplishing quality teamwork requires that practitioners (crews) are trained as a team throughout their educational experiences.

Results

While patient simulation scenarios provide a means of teaching interdisciplinary teamwork and communication, it is important to remember that it is also an excellent strategy for educating students about interdisciplinary teamwork and communication. For instance, as nursing students participate in simulated patient scenarios, they assume a variety of nursing roles, particularly if they are learning in groups. Acting as a team providing nursing care, someone must assume the leadership role, directing other team members and delegating tasks and responsibilities [14]. A primary nurse is identified as the team leader and is assisted by a secondary nurse. Other students may be assigned specific roles such as recorder, communicator, or resource person. Simulated scenarios allow students to work collaboratively as team members with the additional benefit of having faculty present to facilitate teamwork and observe the effectiveness of teamwork [8].

Summary:

8 institutions from seven countries are participating the SimBase project. In the frameworks of this cooperation the pilot test will start in 2011 in four countries and in four languages. The target groups are the following: doctors, residents, nurses.

Hypotheses:

1. What kind of skills can be improved by the SBL learning method (communication, team work, CPR, laparoscopic manual skills)?
2. How much more effective is the SBL learning method than regular learning practices?
3. How do demographic indicators (age and time spent at work) help to learn SBL techniques?
4. What kind of relationship is being formed within the process of information creation between the visual and verbal aspects?
5. How will our students use the opportunity of interactivity?

Research methods:

Quantitative (Likert grade scale) and qualitative (focus group, video recording), SPSS 16, statistical analytics and two sample T test.

Conclusions:

One of the project's output goals is to prepare and disseminate the research results in four different languages. These project results along with interactive network meetings facilitate the practice of verbal communication amongst students with different nationalities: Spanish, English, Portuguese and Hungarian. The results of the project will be disseminated at international forums and professional publications. The project is scheduled to finish at the end of 2012.

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