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A new strategy in nursing education: From hybrid simulation to clinical practice

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SUMMARY

Background: Various instructional environments are used in nurse education to develop students' psychomotor and communication skills, reduce their anxiety levels, and enhance their satisfaction.
Objectives: To examine the effect of three different instructional environments on the development of the students' psychomotor and communication skills and their levels of anxiety and satisfaction.
Design: A prospective study design was used.
Methods: The study sample consisted of 60 nursing students. Before the implementation of the study, the students' cognitive skills and trait anxiety levels were evaluated. The students were divided into five groups and five nursing activities (Leopold's maneuvers, teaching breastfeeding, family planning education, teaching vulvar self-examination and teaching breast self-examination) were specified for each group. They implemented these nursing activities under the supervision of a faculty member in the nursing skills laboratory (NSL), standardized patient laboratory (SPL) and clinical practice environment (CPE) respectively. In each instructional environment, the students' psychomotor and communication skills, state anxiety levels and satisfactions were evaluated.
Results: The median scores for psychomotor skills [NSL = 73.1;SPL = 81.5;CPE = 88.6] and communication skills [NSL = 64.9;SPL = 71.6;CPE = 79.0] were found to increase as the students went on practicing in a more complicated environment ($p < 0.05$). Similarly, it was determined that the students' anxiety levels decreased as they were practicing incrementally [NSL = 33.0;SPL = 32.0;CPE = 31.0]. As the instructional environments were getting more similar to the reality, the students' satisfaction levels were found to become higher.
Conclusions: Students who deliberately practice in the instructional environments until they are competent develop their psychomotor skills while reducing their anxiety levels, and enhancing their communication skills and satisfaction. For that reason, the development of students' competency areas is thought to be effective for enhancement of patients and health care workers' safety.

Background

Patient safety is regarded as a priority issue in health services around the world (Xianqiong et al., 2008; Kiersma et al., 2011). One of the factors that threaten patient safety and cause medical errors is the health professionals' inability to transfer knowledge to practice (Robinson and Dearmon, 2013). Particularly in areas related to health, professional training which requires the integration of knowledge and practice to reduce the error rate and ensure patient safety, is of great importance.

One of the fundamental aims of nurse education is to enable students to transfer their knowledge to practice (Kim et al., 2012). The educational environments that are frequently used in transferring knowledge to practice are the nursing skills laboratories, the standardized patient laboratories and the clinical environments. The use of different instructional environments has an important place in developing students' psychomotor skills (Morgan, 2006; Becker et al., 2006; Baxter et al., 2009; Richardson et al., 2009; Rickles et al., 2009; Terzioglu et al., 2014) and communication skills (Decker et al., 2008; Morgan, 2006; Schlegel et al., 2009; Eid et al., 2009; Elçin et al., 2010) while reducing their anxiety levels (Becker et al., 2006; Robinson-Smith et al., 2009) and enhancing their satisfaction (Klein, 2006; Mete & Uysal, 2010; Beyer, 2012; Adamson, 2012; Alexander & Dearsley, 2013; Kim-Godwin et al., 2013; Terzioglu et al., 2013).

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Due to the lack of substructure and materials and insufficient numbers of faculty members at institutions that provide nurse education in our country, psychomotor skills are mostly taught in the clinical practice environment. However, the learning outcomes may not be achieved due to the inability to control environmental conditions in the clinical practice environment, the concerns that patient safety and patient rights may not be ensured and insufficient number of nurses working at the clinic. This situation may result in nurses graduating with inadequate psychomotor skills (Marzouk, 2015; Kim et al., 2012).

Obstetrics and gynecology nursing is an area in which the balance between the health and illness of the mother, fetus and newborn can be disturbed, and events that require emergency treatment may emerge at any time. This situation may give students fewer learning opportunities or cause the learning process to be interrupted in the clinical environment. Additionally, concerns related to the privacy of women cause students to have problems in making observations or applying their nursing skills (Durham & Sherwood, 2008; Kim et al., 2012). The number of students is increasing constantly and the clinical practice areas are becoming inadequate in terms of quality and quantity in our country that may result in students' failure to receive clinical education at an effective, desired level. To reduce these problems and achieve the predetermined learning outcomes, new instructional methods and different instructional environments should be implemented.

The aim of the study was to examine the effect of three instructional environments – the nursing skills laboratory, standardized patient laboratory and clinical practice environment – on the development of students' psychomotor and communication skills as well as their levels of anxiety and satisfaction.

Method

The sample of the study consisted of 60 students studying at a nursing faculty in the fall term of 2013–2014 academic year in Ankara, Turkey and completed the theoretical part of the "Obstetrics and Gynecology Nursing" course. Due to the failure to attend the standardized patient practice, one student was excluded from the sample and the study was completed with 59 students.

After the theoretical part of the "Obstetrics and Gynecology Nursing" course was completed, the students were divided into five groups by using a random number table based on the sequence in the class attendance list. For each group, a nursing activity (Leopold's maneuvers, teaching breastfeeding, family planning education, teaching vulvar self-examination and teaching breast self-examination) was identified for the development of the psychomotor skills. Initially, the students were asked to write down the practice steps on each Cognitive Skills Checklist for evaluating the pre-training cognitive skills. Additionally, a semi-structured questionnaire form was used to identify the students' socio-demographic characteristics and the Spielberger Trait Anxiety Inventory was employed to determine their trait anxiety levels.

In the nursing skills laboratory, the first instructional environment, the students watched videos showing the practice steps of the targeted nursing skills. The faculty members demonstrated the practice steps by using a full-size birth model, a vulva model, a breast model, a wearable breast model, a baby model and the models designed for family planning methods in five different stations. The students deliberately practiced the nursing skills under the supervision of a faculty member.

In the second instructional environment, the standardized patient laboratory, the students conducted their practices in four different rooms designed as the outpatient clinic rooms. Before the implementation, the faculty members developed the scenarios. Seven standardized patients were assigned to the study. They were trained according to the scenarios and how to use the educational models. During the sessions, the standardized patients received training and counseling from the students on breast self-examination, vulvar self-examination and breastfeeding by using a wearable breast model and wearable vulva model. In the Leopold's maneuvers practice, the abdominal skin of the full-size birth model that can be detachable was used and the skin was fastened on the standardized patient's abdomen by placing a fetus model under the abdominal skin. In family planning education, the students were able to provide training and counseling to standardized patients by using models on which family planning methods could be applied. The practice sessions, based on the scenarios lasted 20 min on average and were video-recorded. Following the implementation, the students were provided feedback using the video recordings.

In the third instructional environment, the clinical practice environment, the real patients were matched with the students using a simple random sampling method. The students repeated the skills, they had practiced in the nursing skills laboratory and standardized patient laboratory, using real patients under the supervision of a faculty member. After the activity, debriefing sessions were organized for the students.

The students' psychomotor and communication skills were evaluated by the faculty members using the Psychomotor Skills Checklist and the Effective Communication Skills Checklist in all the instructional environments. The Spielberger State Anxiety Inventory was also employed to identify the students' state anxiety levels. The students' satisfaction levels related to the instructional environments were evaluated using the Student Satisfaction Evaluation Form after the clinical practice.

Data Collection Instruments

1. Semi Structured Questionnaire Form: Prepared by the researchers and consisting of 21 semi structured questions, this form was used to identify the students' demographic characteristics.
2. Cognitive Skills Checklists: Five checklists in which the cognitive skills were evaluated toward performing Leopold's maneuvers, teaching breastfeeding, family planning education, and self-examination of the vulva and breasts were blank version of the Psychomotor Skills Checklists. Each step written correctly, as given one point. The total scores of the students in the forms were calculated out of 100.
3. Psychomotor Skills Checklists: "Leopold's Maneuvers Skill Checklist," "Teaching Breastfeeding Skill Checklist," "Family Planning Education Skill Checklist," "Teaching Vulvar Self-Examination Skill Checklist" and "Teaching Breast Self-Examination Skill Checklist" were used to evaluate the psychomotor skills (Taşkın et al., 2011). Each checklist was rated based on a five-point Likert scale (0 = applied none of the activities, 1 = applied less than half the activities; 2 = applied half the activities; 3 = applied more than half the activities; 4 = applied all the activities). The total scores of the students in the forms were calculated out of 100.
4. Effective Communication Skills Checklist: This checklist developed by Eroglu and Terzioglu (Taşkın et al., 2011) included the behavioral steps that would enable the students to establish effective communication with the individuals to whom they provided service. In the evaluation of the checklist, each correct behavior that the student performed was given one point. The students' total scores were calculated out of 100.
5. Spielberger's State and Trait Anxiety Inventory: The State–Trait Anxiety Inventory (STAI) was developed by Spielberger et al. and adapted for Turkish by Öner and Le Compte (1985). STAI consists of 40 items and includes two separate scales. The "Trait Anxiety Scale" was developed as a means to identify how an individual felt in general. The reliability coefficient determined by the alpha correlation was between 0.83 and 0.87. The "State Anxiety Scale" is a scale that shows how an individual feels in a situation and in the particular conditions. The reliability coefficient was found between 0.94 and 0.96. The scores obtained from the two scales varied between 20 and 80. Higher scores show higher levels of anxiety and the lower scores show lower levels of anxiety.
6. Student Satisfaction Evaluation Form: The form developed by the researchers after reviewing the related literature (Aebersold et al., 2012; Parker et al., 2011; Crouch, 2009). That form was used to