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Nursing Students' Experience of Simulation-based Learning with Standardized Patients

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Abstract— This study was carried out to examine the awareness and experiences of nursing students who learned through simulated practice with standardized patients, and to identify ways to include it in learner-centered nursing practice education. Data collection was carried out from September 2012 to June 2013, and was discontinued when data saturation was achieved. Thus, nine people participated in this study. The data were analyzed using the Giorgi method. The focal meanings that emerged from the analysis were “Confidence,” “Realistic attraction,” “Emotional support,” and “Situational coping ability.” The participants realized that they had learnt to apply theory to practice through this method, and reported that it was essential knowledge for their future as a nurse. The findings of this study suggested that experiencing such a simulation-based technique complements the limitations of the existing hands-on training, and increases the effectiveness of learner-centered nursing practice education.

Keywords— Simulation-based learning, Standardized patients

I. INTRODUCTION

Patients in an information-oriented society often seek immediate solutions to their health problems. In addition, the expectations from nurses are increasing due to improvement in patients' education levels. Consequently, in order to provide high quality nursing care, nurses should cultivate an integrated knowledge base and receive quality education that imparts both optimal skills and a professional attitude [1].

Such demands in nursing education lead a variety of educational methods to be applied and analyzed, to train talented individuals with skills and professional attitude, based on integrated knowledge in real situations. Simulation-based learning is introduced as one of the strategies of improving nursing performance, based on integrated knowledge at site.

The method of simulation-based learning has expedited consumers' expectation levels for curriculums and advancements in technology, along with the changes in environments like health care, which has considerable demands with limited resources [2].

In particular, nursing education courses should be linked to knowledge, skills, and attitudes that foster the development of coping skills in nursing students in real situations. It should also be suitable for nurses who already have suitable skills in nursing practice. Simulation-based training would be a sufficient means of complementing the currently limited clinical practice that nursing students are exposed to [3].

Current practical and interactive ways of teaching and learning, such as utilizing a simulator, are more effective in improving nursing students' knowledge and skills than is the traditional lecture method [4]. A simulation method creates an environment where learners can integrate theory and practice without harming the patient, and learn to take the stability and well-being of patients into consideration for optimal care [5]. One of the advantages of simulation is that it eliminates the risk of harming patients or trainees by mistakes or errors; furthermore, these errors can then be used for feedback and iterative learning and re-education [6]. The other advantages of simulation practice include giving students heightened awareness of medical accidents; risk-free hands-on experience for students; minimal student anxiety; support of colleagues; provision of clinical experience consistent with course content; learning appropriate knowledge, skills, and attitudes for nursing; and opportunity to experience cases that students cannot approach during training [7]. Simulation training provides concrete learning opportunities within a structured scenario in limited clinical settings [8]. In addition, it promotes appropriate nursing intervention skills suitable for the situation, critical thinking, and problem-solving skills by creating physiological responses through the computer program similar to those that the students would encounter in an actual clinical environment [9]. In simulation education, standardized patients are utilized in a planned learning method. Thus, the students have access to patients who show the same behaviors and symptoms seen in patients in a non-structured learning environment.



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Using this method, students can experience conditions similar to real situations, which allow them to identify nursing problems that arise in such situations, learn decision-making skills and determine the appropriate course of action, and directly implement these nursing care decisions in a step by step fashion. In addition, they can learn better communication skills [10].

Standardized patients do not produce physiological responses based on computer programs, but rather, trained individuals provide a more realistic learning environment for students than the simulators do.

The present study aimed to identify methods that could be incorporated in learner-centered nursing practice education. Thus, the study examined nursing students' learning experience from simulation practice that utilized standardized patients.

The purpose of this study was to discover methods used in learner-centered nursing practice education by identifying and analyzing students' awareness of their simulation experience. Applying standardized patients from their point of view targeting nursing students who experienced simulation learning applying standardized patients. Accordingly, the relevant research question is "What is the experience of nursing students in a simulation-based learning program with standardized patients?"

II. STUDY METHOD

1. Study Design

This was a qualitative study that applied the phenomenological method to understand and explain the meanings of the experiences of nursing students who participated in simulation-based learning with standardized patients.

2. Selection of study participants

Students who attended a nursing college in U and D metropolitan cities in South Korea, and who fulfilled the following criteria, were selected.

- 1) The student can communicate clearly and is consistent and clear in their thinking or judgment.
- 2) The student understands the purpose of the study and voluntarily agrees to participate in the study.

Data were collected until saturation was achieved (i.e., when no new statements about relevant phenomena are acquired). Thus, nine people participated in this study.

3. Data Collection

Data were collected from September 2012 to June 2013 (when saturation was achieved). I conducted in-depth interviews and observations to place myself in participants' worlds and comprehensively understand their experiences. The interviews were conducted in a student counseling center or an office, on a pre-selected date and time. The interview also helped develop a mutually beneficial trust and intimacy between the participants and myself.

During the interviews, the participants were asked to describe their experience, which were then recorded in a journal. The interview questions were non-structured and open-ended, and the researcher was not allowed to influence the student intentionally or to provide hints to elicit a desirable response.

I also extracted and recorded important information on participants' daily lives, while the participants were talking, rather than directly asking questions about such information. Ambiguous sections were discussed again. I did not contribute to the participant's statements, even if core information was revealed in this process. On completion of one session, I checked to see if the essential contents had been included. Then, follow-up interviews were conducted, wherein I asked specific questions and elicited further discussion on topics where content was insufficient.

In order to avoid loss of data, an audio recorder was used, with the consent of the participant.

Each participant was interviewed over an average of four sessions, with each session lasting for about two hours. At the end of each interview session, the time and place was finalized for the next interview.

4. Data Analysis

The data were analyzed using the Giorgi method [11], focusing on describing the experience of the participants in their words, and identifying the meaning of their experiences. The detailed procedure was as follows:

- 1) The researcher examines and understands the participant's descriptions, reading them repeatedly to identify any gaps in the information.
- 2) The researcher clarifies the ambiguous parts of the statement by asking the participant to identify the exact meaning.
- 3) After understanding all of the contents of the interview, the researcher identifies meaning units significant for the study subject, adopting a psychological perspective.



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4) By focusing on the meaning units identified from the participant's point of view, the researcher extracts the themes that generalize this experience, according to the researcher's point of view.

5) In order to solidify the theme, the researcher identifies the central meaning of the participant's experience in the researcher's language.

6) The researcher presents the central meaning by typical, contextual, and structural techniques, and the meaning of the experience is identified from the perspective of each participant.

7) The researcher presents general and structural descriptions and the meaning of the lived experiences identified from all the participants' perspectives by integrating the contextual and structural statements of each case.

Thus, data analysis and collection were conducted simultaneously. Data were analyzed by checking for their relation to the overall study topic and by asking advice from a nursing professor, an expert in qualitative research methods, on the study findings. In addition, the consistency and conformity of the contents of the analysis to participants' lived experiences was verified by asking participants.

5. Ethical considerations

Qualitative research is conducted by establishing a good relationship with the individual participants, so that their private lives may be explored. Proper control is very difficult. Therefore, prior consent and cooperation must be secured from the research participants before commencement of data collection. In the present study, we explained its purpose to the participants and conducted the interviews only after securing the participants' consent. The participants were assured that the interview information would be used solely for research purposes and that the transcribed data would be disposed of on completion of the paper. They were also assured that they would remain anonymous—the identity and status of the participants would never be disclosed. In addition, the participants were informed that all the information will be retained by the researcher for at least five years, and would be published in nursing journals and presented at nursing conferences. The participants were also made aware of their right to stop the interview or skip any question, despite their voluntary participation.

III. RESEARCH FINDINGS

From participants' simulation-based learning experiences, we extracted the following focal meanings: "confidence," "realistic attraction," "emotional support," "situational coping ability." After confirming the themes using general and structural techniques, we present them as follows.

The semantic structure of participants experiences in learning using standardized patients was generalized by classifying it into ten themes and four focal meanings.

The themes for "confidence" were "advanced state," "assurance for patients," and "technique improvement."

Participants experienced improvement in their performances as they practiced more with standardized patients, and built self-confidence in areas that needed progress.

"I handled everything well systematically, but I felt like I lacked training in medication delivery. I felt really proud of myself for improving day by day as I continued practicing with SPs. I have greater confidence in my work as I practice more."

Participants admitted that they were still afraid of facing real patients, but as they experienced simulation-based learning with standardized patients, they learned to handle real patients, and developed the confidence to acknowledge their own nursing problems.

"I tried to make eye contact with SPs and took the next step without anyone forcing me. I could acknowledge the problem right away, because I was facing the SP directly. I learned so much about dealing with patients and nursing them."

Participants directly interacted with SPs and experienced self-improvement as they performed practical nursing skills that are different from what they learned in textbooks and in classrooms.

"As I performed my nursing skills on SPs, I clearly understood the method I was using and I experienced self-improvement in a real setting. Compared to how I was before, I think I am greatly improving my skills. While visually examining a simulation of a real person instead of a mannequin, the participants felt like they were treating actual patients, and were convinced that by treating the patients in this way they could practice nursing with confidence.

Those who expressed that they were nervous when practicing for the first time stated that they had advanced as a result of the learning, and were no longer intimidated by patients.



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With regard to “realistic attraction,” the themes were “rapid response” and “good communication.” Participants claimed that, in contrast to mannequins, SPs responded quickly, and this realistic setting helped them reduce tension and increase focus.

“The situation was much more realistic with SPs, compared to the one using a mannequin, and I was less nervous because of the SP’s quick reaction and responses. As I was experiencing SP, I could see the condition of the patient immediately, because the patient was a real person with a prompt reaction. Working with a real-person patient was a great attraction in this learning experience.”

Nursing students experienced real expressions and actions of patients, and could communicate with patients exceptionally well, based on what they experienced. “Since the SP acted like a real patient, I could focus more and communicate very well with him. Because our conversation was smooth, I could thoroughly understand the patient’s condition. I could feel increased flexibility, because I communicated with the patient very well.”

The participants expressed that with standardized patients they felt like real nurses. They added that when waiting for an answer from a mannequin, they could not identify the patient’s emotional state by the voice alone. On the other hand, with standardized patients, they could do so easily by reading patients’ facial expressions in addition to listening to patients’ verbal responses. Thus, participants felt as if they were meeting a real patient in the hospital. In addition, the patient’s instant responses to the intervention helped the nurses to interview and communicate in a relaxed state.

Regarding “emotional support,” the themes were “rapport formation” and “listening.” Nursing students seem nervous during their first conversation with the standardized patients, but soon they discover themselves in a rapport with patients as they listen to the voices of real-person patients.

“At first, I was really nervous, but I got used to it by the end. I could predict what could be similar in real situations, and learned to provide patients with psychological support. I asked if they felt any discomfort, and tried to develop a rapport with them. I wanted to provide better care and treatment to patients.” Nursing students treated SPs very carefully, as if they were real patients and, to provide a psychological support, they made eye contact and became more considerate of the patients.

“Unlike with mannequins, I learned to provide psychological care with real-person patients, and became more attentive to the subjects. I listened to real-person patients more carefully as they gave me prompt responses.”

By directly asking questions and performing basic nursing functions on standardized patients, participants could feel patients’ emotions by looking at patients’ facial expressions and listening to their voice, instead of just listening to the mechanical sounds of mannequins.

As such, they reported experiencing rapport formation, which they had previously only read about in books. This enabled them to perform more patient-centered care by listening carefully to what patients said. Furthermore, participants experienced that they had the tendency to provide emotional support to patients, treat patients more kindly, and perform primary nursing interventions carefully.

Finally, with reference to “situational coping ability,” the themes were “case analyzing,” “thinking before acting,” and “interacting with team members.”

Participants found themselves feeling less nervous and highly responsive to each situation as they practiced their nursing skills with SPs. They experienced self-improvement in analyzing the situation and responding promptly to each condition with appropriate medical supplies.

“I was calm using medical tools on patients that I have not worked with before, and I feel like I have improved my ability to handle difficult situations. After studying the SP cases and identifying the priorities, I could see the big picture.”

Participants accepted the situations with SPs very well. They found themselves quickly understanding and reacting to the situations, and were surprised by their own improvement.

“When I first encountered a SP, I was really nervous. But now, I am familiar with such situations and I know how to deal with each case extremely well. I am surprised by my own reaction. I have more time to think, and I have changed my perspectives on working with patients.”

Participants could see their strengths and weaknesses while communicating with their teammates, and overcame their weaknesses by learning from each other.

“I really enjoyed trying my best, while helping teammates and communicating to find out what the patients need. Through SP practice, I learned to recognize my strengths and weaknesses, and overcome my weakness by learning from my teammates. With peer communications and support, I could focus much better on providing the best care for my patient.”

While participating in simulation practice education that utilized standardized patients, participants analyzed the symptoms mentioned by the patients and then diagnosed the patient’s problems.



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Although they were embarrassed when meeting the patient for the first time, rather than acting unconditionally, the participants found themselves assessing the patient first, thinking about which nursing intervention needed to be implemented, and then acting accordingly. In addition, they witnessed an improvement in patients' condition when each team member performed their appropriate roles, rather than taking care of everything alone. Therefore, they realized the importance of interaction between care team members and that the patient's condition may improve by communicating with team members, expressing each others' deficiencies or questionable decisions, and supporting each other. They also became aware of the team dynamics of other teams.

These research findings correspond with other research reports on simulation-based education, which demonstrate student improvement in critical thinking and problem-solving in unexpected situations [1,12,13].

However, in contrast to education with simulator mannequins, the simulation-based education with standardized patients showed that, in terms of communication skills, students developed a much better rapport with patients because they learned to listen carefully, and provided better psychological support to the patients.

IV. CONCLUSIONS AND RECOMMENDATIONS

The present study aimed to identify methods that could be incorporated in learner-centered nursing practice education. Thus, the study examined nursing students' learning experience from simulation practice that utilized standardized patients.

The data collection period was from September 2012 to June 2013 (when data reached saturation). A total of 7 people participated in this study.

Each participant was interviewed over an average of four sessions, with each session lasting for about two hours. The data were then analyzed using the Giorgi method.

First, the meaning of simulation-based learning applying standardized patients for nursing students was found to be 「confidence」 and “Advanced state”, “Assurance for patients” and “Technique improvement” were identified as the theme.

Second, the meaning of simulation-based learning applying standardized patients for nursing students turned out to be 「realistic attraction」 and “Rapid response” and “Good communication” were identified as the theme.

Third, the meaning of simulation-based learning applying standardized patients for nursing students turned out to be 「emotional support」 and “rapport formation” and “Listening” were identified as the theme.

Fourth, the meaning of simulation-based learning applying standardized patients for nursing students was found to be 「situational coping ability」 and “case analyzing”, “Thinking and then moving” and “Interacting with team members” were identified as the theme.

As shown above, before experiencing simulation-based learning with standardized patients, nursing students just accepted what they learned in theoretical education without recognizing how it may be helpful for them as a future nurse.

The findings of the present study indicated that experiencing simulation-based learning with standardized patients helped nursing students realize the application of theoretical learning to practical situations by directly performing the nursing functions for the patients. Thus, they experienced that learning such information is necessary for them as a future nurse.

The clinical field is changing rapidly, which requires individuals who can cope with these changes. Talented people who possess both theoretical knowledge and can deal with the needs of various clinical situations, smoothly achieve relationships with various hospital members, and perform basic nursing techniques, are urgently needed. My results suggest that learner-centered nursing education may replace currently teacher-centered education as a means of effectively teaching these skills to future nurses.

This study was carried out to identify the changes in nursing students who had experienced simulation-based learning with standardized patients. Therefore, the learner's perspective was used to assess the effectiveness of such a model of nursing education. According to the findings of the present study, it may be concluded that experiencing simulation-based learning with standardized patients complements the limitations of the existing hands-on training, and increases the effectiveness of learner-centered nursing practice education.

It is possible that specific methods of student-focused nursing practice education with standardized patients can differ according to each institution's practice environment. Simulation-based education methods can include a variety of mannequins, or standardized patients, or a combination of the two. Each method requires further research on its impact in student learning and performance.



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According to the result of this research, the groups consisting of 3–4 nursing students showed passive student reactions in simulation-based education with standardized patients. This result corresponds with the results of other research, which created groups of 4 or 5 students. This shows that more academic attention is needed for deciding the appropriate size of each student group.

I recommend that further research is conducted on application time and evaluation method of standardized patients. I also suggest that the role players of standardized patient must be educated further, so that they might further improve standardized patients' utility in nursing education.

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