The Effects of Maternity Nursing Simulation Practice on Problem Solving Ability and Self-directed Learning Ability

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Abstract. This study was aimed to develop five Simulation Practice Cases of Maternity Nursing and examine the effects of them on problem solving ability and self-directed learning ability. A quasi-experimental pretest-posttest study was conducted with 41 of them in control group and 49 of college junior students in experimental group. Problem solving ability and self-directed learning ability were assessed by self-report questionnaire of Korean Educational Development Institute. Data were analyzed using descriptive statistics and t-test through SPSS 21.0. The levels of problem solving ability of experimental group was significantly higher than that of the control group (t=2.295, p=.024). No significant difference was found in self-directed learning ability between two groups (t=1.774, p=.080). The study results showed that Maternity Simulation Practice was proved to be effective in improving problem solving ability and not to be effective in improving self-directed learning ability. Therefore, it is recommended that the nursing students should be provided Maternity Nursing Simulation Practice to improve problem solving ability.

Keywords: Simulation, Problem Solving Ability, Self-directed Learning Ability, Maternity Nursing

1 Introduction

Recently simulation practice becomes the important portion in nursing education due to increasing patients’ right and patients’ safety need [1]. The various nursing interventions has been tried while professional nursing knowledge and medical technology. These changes in clinical situation urge that even a novice nurse needs to be confident nurse. Every client wants nursing service for him or her to be provided by only nurse. Nursing students can get to only observe clinical situation. Therefore, nursing education curriculum needs simulation practice more [2]. Especially obstetric practice is more difficult for nursing students to observe a private labor and delivery situation than other clinical practice. Recent study applied simulation practice in Maternity Nursing and nursing students reported increased their self confidence [3], other research applied simulation practice combined Problem
Based Learning and their nursing students reported that their problem solving process were to become easier and their clinical practice confidence to be increased [2]. However, simulation practice is effective for learning problem solving ability and self-directed learning ability, yet it has not been studied in depth among Maternity Nursing area, whereas many studies are found in Subcutaneous Injection simulation practice [4]. So far most simulation practice studies were one group pretest-posttest design studies but this study has the control group and the experimental group pretest-posttest design.

2 Methods

2.1 Research procedure

This study was aimed to develop 5 Simulation Practice Cases of Maternity Nursing and then assess the effects of this program on problem solving ability and self-directed learning ability. A quasi-experimental pretest-posttest study was conducted with 49 of college junior students in experimental group and 41 of them in control group. The participants consisted of 90 volunteers among 128 junior students. The study was conducted with participants who submitted signed consent that the study results may be used only for study and guarantees all participants’ anonymity. Pretest was carried out by a structured questionnaire with 90 students on the first day of clinical practice during six days of clinical practice in delivery floor. Posttest was carried out with 41 students of control group after case conference without simulation practice on the fifth day. Posttest was carried out with 49 students of experimental group after case conference and simulation practice on the fifth day. All the students of control group performed simulation practice after posttest because of the ethical consideration.

SPSS program 21.0 (SPSS Inc., Chicago, IL, USA) was used to analyze the data. Descriptive statistics were used to identify the general characteristics of the participants, the means of problem solving ability and self-directed learning ability. Additionally, t-test was used to determine the differences between the control group and experimental group. The value of p<0.05 was considered statistically significant.

2.2 Survey instruments

There were 7 components in questionnaire when examining pesticide related symptoms and it was 3 point scale meaning 1 point (rarely/never), 2 point (occasionally), and 3 point (always). This indicates that as the point is higher, subjects display more pesticide related symptoms. Cronbach's alpha for the present study was 0.84.

This study was conducted by using instruments of problem solving ability scale and self-directed learning ability scale that Korean Educational Development Institute
developed in study ‘Research on the National Standards of Life Competencies and Quality Management for Learning’ [5].

The problem solving ability scale was composed of 45 items questionnaires and 9 subscales with 5 point scale (1 point='do not agree very strongly' ~ 5 point='agree very strongly') [5]. The self-directed learning ability scale was composed of 40 items questionnaires and 8 subscales with 5 point scale (1 point='do not agree very strongly' ~ 5 point='agree very strongly') [5]. These means as the point is higher, subjects have more problem solving ability and self-directed learning ability. Cronbach's alpha for the original study were .94 and .92 respectively. Cronbach's alpha for the present study were .90 and .91 respectively.

3 Results

3.1 General characteristics and Homogeneity Test between the Control and Experimental Group

There was no significant difference in result of the age between the control group and the experimental group (t=1.58, p=.118). The participants’ reports of Maternity Nursing of previous semester did not show any significant difference between the control group and the experimental group. (t=-.45, p=.654).

The pre-test score of participants in problem solving ability between the control group and experimental group did not have any significant difference (t=.397, p=.692).

The pre-test score of participants in self-directed learning ability between the control group and the experimental group did not have any significant difference (t=.56, p=.577).

3.2 Difference of Problem solving ability between the Control Group and Experimental Group

The post-test score of the control group was 3.38±0.34. The post-test score of the experimental group was 3.56±0.37. The mean scores of problem solving ability was significantly higher in the experimental group than the control group (t=2.30, p=.024).

3.3 Difference of Self-directed Learning ability between the Control and the Experimental Group

The post-test score of the control group was 3.44±0.39. The post-test score of the experimental group was 3.59±0.43. The mean scores of self-directed ability was not significantly higher in the experimental group than the control group (t=1.77, p=.080).
4 Conclusions

The study of Maternity Nursing Simulation practice has significantly improved the problem solving ability of the participants of experimental group. This indicates that Maternity Nursing Simulation can possibly help participants and improve their problem solving ability, as to the result, the conclusion has drawn similar in other articles of same subject [2]. After completing simulation-based education in obstetric nursing practice, confidence about performing clinical skills improved, according to Kim [6]. The opportunity to observe labor and delivery process especially for male nursing students has recently been rarely given due to the decrease of the birth rate and strengthened privacy policy for women. Therefore, Maternity Nursing Simulation provides adequate training to make students to obtain problem solving ability which can substitute the actual clinical practice.

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References