The Effect of Basic Cardiopulmonary resuscitation training on Cardiopulmonary resuscitation Knowledge, Attitude, and Self-efficacy of Nursing Students

Gyung Park

Department of Nursing, Chodang University, Muangun Muanep, Muanro 380, Jeollanamdo, South KOREA
Corresponding Author: gypark@cdu.ac.kr

Abstract. The purpose of this study was to verify the effect of basic CPR (Cardiopulmonary resuscitation) training on CPR knowledge, attitude, and self-efficacy of nursing students on CPR training. Methods: This study was based on a pre-experiment that uses a before-after design in a single group. Measurement tools were the knowledge scale revised by the researcher based on the 2010 AHA guideline and Park Jeong-mi's tool (2006), the attitude measurement scale revised by the researcher based on the scale of Kang Kyung-hui (2004) and Park So-hyun (2002) for CPR. For self-efficacy measurement, this study used a tool revised by Park Jeong-mi (2006), which based on the tools of Kang Kyung-hui (2004) and Schlesse, et al. (1995). To analyze the effect, paired t-test, Pearson’s correlation coefficients were used. Results: The results of this study revealed that the basic CPR training for nursing students significantly improved knowledge, attitude, and self-efficacy in relation to CPR. Conclusion: The results demonstrated that basic CPR training contributed to improving knowledge, attitude, and self-efficacy in nursing students.

Key Words: Attitude, Cardiopulmonary resuscitation, Knowledge, Self-efficacy

1 Introduction

The number of heart disease deaths, including ischemic heart disease, in Korea shows an increasing trend, where the death toll was 35.3 people per 100,000 population as of 2003, 43.4 people in 2008, and 50.1 people in 2013[1]. These diseases may result in a fatal outcome if not properly treated at the time of cardiac arrest and immediate detection of the patient's condition by the first detector, and early CPR(Cardiopulmonary resuscitation) implementation can increase the survival rate of those suffering cardiac arrest by two to three folds [2].

Roughly 50-78 of acute deaths that occur within hospitals result from cardiac arrest [3]. CPR performance capability by the first detector at the time of cardiac arrest is crucial to the patient's survival [4]. However, 55.4% of new nurses have low CPR performance capabilities [5].
Therefore, it is necessary to check the effect of CPR training on knowledge, attitude, and self-efficacy that are reported to be factors inhibiting the performance of CPR in nursing students who will be the first detector of CPR in the clinical area.

1.1 Purposes

The purpose of this study was to verify the differences on knowledge, attitude, and self-efficacy in relation to CPR training in nursing students and the relationship among these variables before and after CPR training.

2 Method

2.1 Research Design

This research was a pre-experiment that used a before-after design in a single group. Basic CPR training was applied with nursing students to verify its effect on students’ knowledge, attitude, and self-efficacy in relation to CPR.

2.2 Participants

Participants were 102 nursing students who participated in training programs conducted in the CPR center of the C University through nine sessions located in G city, from January to September 2013.

2.3 Measurement Tools

To test the effect of basic CPR knowledge, we used measuring tool developed by Park Jeong-mi[6] and revised by the researcher based on the 2010 AHA guideline. To measure the effect on attitude, we used the attitude tool developed by Kang Kyung-hui [7] and Park So-hyun[8] and revised by the researcher based on the 2010 AHA guideline. For self-efficacy measurement, we used a specific self-efficacy measuring tool revised by Park Jeong-mi [6] based on the tools of Schlessel, et al. [9] and Kang Kyung-hui [7].

2.4 Research Process

The intervention of this study has been designed on Power Point based on the 2010 AHA (American Heart Association) guideline and educated 30 minutes ahead of practical training which was consisted of two-hour theoretical and four-hour practical
training in each session. Three or less students are assigned to one mannequin to watch and follow (Practice While Watch) videos made by AHA. Two research assistant BLS providers helped as an assistant during CPR training.

2.5 Data Analysis

The collected data were analyzed using the SPSS WIN 19.0 program. To verify the differences in CPR knowledge, attitude, and self-efficacy before-after the intervention were analyzed with a paired t-test. For correlation analysis among CPR knowledge, attitude, and self-efficacy, we used Pearson's correlation coefficients.

3 Result

The results of this study are as follows:

1. The knowledge score of participants after CPR training was 14.66 points, significantly higher than the pre-training score of 9.01 points (t=-23.32, p<.001); the score for attitude was 25.75 points, which was significantly higher than the 19.21 point score before CPR training (t=-20.37, p<.001), and self-efficacy showed a significant increase from 63.73 to 95.01 before and after CPR training (t=-14.94, p<.001) [Table 1].

2. The CPR-related attitude and self-efficacy (r=.263 p=.008) of participants prior to CPR training revealed a weak correlation, and after training there was a moderate correlation in CPR-related attitude and self-efficacy (r=.572 p<.001) only [Table 2].

Table 1. Comparison of Knowledge, Attitude and Self-efficacy between Pretest and Post-test (N=102)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M±SD</td>
<td>M±SD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge</td>
<td>9.01±2.53</td>
<td>14.66±1.98</td>
<td>-23.32</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Attitude</td>
<td>19.21±3.21</td>
<td>25.75±2.00</td>
<td>-20.37</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>63.73±21.73</td>
<td>95.01±14.07</td>
<td>-14.94</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>
Table 2. Correlations among Knowledge, Attitude and Self-efficacy at Pretest and Posttest (N=102)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pre-test</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Attitude</td>
<td>Self-efficacy</td>
</tr>
<tr>
<td></td>
<td>r</td>
<td>p</td>
</tr>
<tr>
<td>Knowledge</td>
<td>.134</td>
<td>.181</td>
</tr>
<tr>
<td>Attitude</td>
<td>.263</td>
<td>.008</td>
</tr>
</tbody>
</table>

4 Conclusions

The results demonstrated the basic CPR training contributed to improve CPR-related knowledge, attitude, and self-efficacy in nursing students. Therefore, it is recommended that basic CPR training need to in nursing students to improve on CPR performance abilities in the clinical area as the first detector.

References