The Effects of Open Heart Surgery Patients Proving for Video Information

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Abstract. This study aims to verify the effect of a nursing intervention of the provision of video information on subjects’ delirium and anxiety. It is a quasi-experimental study with a nonequivalent control group non-synchronized design. The subjects are patients who plan to be hospitalized in an intensive care unit for open heart surgery, 25 people in an experimental group and 25 people in a control group. Delirium measurement tool, CAM-ICU was used, and anxiety measurement tool, STAI was also. Using SPSS 21.0 program, analyses were conducted with χ²-test, Fisher’s exact test and t-test. In the occurrence of delirium, there was no statistically significant difference (t=1.50, p=.260). However, in the reduction of anxiety, there was a statistically significant difference (t=2.27, p=.028). Nursing intervention of the provision of video information can be applied as an effective nursing intervention for the reduction of anxiety in open heart surgery patients.

Keywords: Open heart surgery, Providing for video information, Delirium, Anxiety

1 Introduction

Delirium is a reversible disorder that shows changed consciousness, diminished concentration, cognitive dysfunction and changed mental activity; disability appears over a short time; and it tends to change even in the progress of one day [1]. Patients with a high delirium incidence include the elderly, surgical patients and burn patients [2]. Patients who experience delirium have a high mortality rate and a longer period of hospitalization than those who do not [2]. It was reported that the incidence of postoperative delirium was 7.0-14.0% in general surgery; 5.7% in urology surgery; and 13.5-21.0% in open heart surgery [3]. Like this, it was reported that delirium incidence was especially prominent in open heart surgery patients. Postoperative delirium is a serious problem occurring in patients hospitalized in the
ICU [4]. However, there is a study of nursing interventions for the prevention of delirium with open heart surgery patients.

Anxiety is a reaction to stress, which is an emotion that appears due to a loss of the internal control ability of concern, stress, worry and fear of imminent danger, etc. [5] Preoperative anxiety may cause a negative impact on physiological indicators such as blood pressure rise and Arrhythmia by stimulating the autonomic nervous system due to fears about the surgical outcome [6]. Moderate or higher level anxiety appears in 60% of open heart surgery patients [7]. Patients experience a fear of uncertain death for postoperative recovery in open heart surgery than in other surgery [8]. Thus, for the reduction of delirium and anxiety, prevention is most important of all. As postoperative nursing intervention that can alleviate delirium, anxiety and stress appearing in patients, recently, education through the provision of information has been used, with the method utilizing media such as booklets, video, slides, and patient status boards, etc. [9] In a preceding study, the provision of information had an effect on anxiety and environmental stress in open heart surgery patients [10]. However, there are insufficient studies that investigate and reveal the effect of the provision of video information on delirium and anxiety in open heart surgery patients.

Thus, this study provided information on the day before surgery for open heart surgery patients by verifying the impacts of the provision of video information on delirium, anxiety and nursing satisfaction in order to provide them with basic materials for the efficient nursing intervention.

2 Method

2.1 Research Design

This study is a quasi-experimental study in a nonequivalent control group nonsynchronized design to know the impact of the provision of video information on delirium and anxiety in open heart surgery patients. For ethical considerations of the study, it was conducted after receiving the approval of the Biomedical Ethics Committee of High-level General Hospital K. (IRB Approval number: KBSMC2012-01-117).

In selecting research subjects, the specific standards are as follows.
(1) Criteria for selecting subjects

① Person who is hospitalized in the ICU, putting on a respirator after cardiothoracic surgery;
② Person who can read and write, and understand and reply to the contents of the questionnaire;
③ Person who agreed to participate in this study; and
④ Person 20 years of age or older.

(2) Criteria for exclusion
1. Person who already has delirium or a problem in cognitive function before surgery in checking preoperative cognitive status;
2. Pediatric patient; and
3. Person who is hospitalized in the ICU and has surgery.

2.2 Subjects

Research subjects were patients who were hospitalized in the department of thoracic surgery of High-Level General Hospital K. in Seoul, and they were 25 persons in an experimental group and 25 persons in a control group, who understood the purpose of the study and signed to participate in it. As for the number of subjects, referring to preceding research [9], using G*Power ver. 3.1, the significance level was set to 0.05; the size of the effect, to 0.8; and the power of the test to 0.7.

For prior investigation, the researcher visited the subjects’ rooms in person on the day before open heart surgery, conducted a survey of their general characteristics, disease characteristics and state-anxiety with questionnaires, and after the intervention, the researcher visited and investigated their state-anxiety and delirium occurrence by visiting the ICU in person before they moved to the general ward. The researcher made efforts to reduce errors in the items of the questionnaires, by giving sufficient necessary descriptions to elderly subjects who could not understand the details of the questionnaires and by writing for elderly subjects who could not write.

2.3 Research tool and Reliability

1) Delirium
This study used a tool [12] adapted by Chang & Choi from the tool for assessing ICU delirium (CAM-ICU) developed by Ely [11]. Reliability was Cronbach’s=.973.
2) Anxiety
This study used a tool [13] adapted by Kim & Shin from the State-Trait Anxiety Inventory (STAI) developed by Spielberger [5]. Reliability was Cronbach’s=.922.

2.4 Data Collection and Analysis

The period of data collection was from March 15, 2012 through to December 1, 2014. For data analysis, SPSS 21.0 was used with the collected data. For the subjects’ general characteristics and disease-related characteristics, descriptive statistics was used, and for the verification of differences in the occurrence of delirium in the two groups, an independent t-test was used, and for the verification of differences after anxiety, an analysis was conducted, using a paired t-test.
3 Result

There were no statistically significant differences in the general characteristics such as age, sex and education of the research subjects between the experimental group and the control group. There were no statistically significant differences in disease-related characteristics such as diagnosis, ICU hospitalization experience, the past medical history and experience of information about the surgery. Therefore, there were no statistically significant differences in the general characteristics and disease-related characteristics of the subjects, so homogeneity was verified. There was no statistically significant difference in the occurrence of delirium ($t=1.50, p=.260$). However, there was a statistically significant difference in the reduction of anxiety ($t=2.27, p=.028$).

4 Conclusion

As a result of this study, there was a decline in the number of incidences of delirium, though not statistically significant ($t=1.50, p=.260$). It is explained that nursing intervention of the provision of video information applied to the patients who are hospitalized in the ICU after open heart surgery affects the occurrence of delirium. Since there is a statistically significant difference in the reduction of anxiety, so it is an effective nursing intervention of the provision of video information for patients waiting for surgery. It is necessary to conduct repetitive studies of customized nursing intervention of the provision of video information for video contents, period and the number of times, considering the condition of intensive care ward patients. Therefore, the provision of video information has clinical applicability as an effective nursing intervention for the reduction of open heart surgery patients.

References