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The Effects of Visual Information on Anxiety, Uncertainty and Nursing Satisfaction in Elderly Patients after the Total Knee Arthroplasty

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Abstract. The purpose of the study sought to address two issues: (1) the psychophysiological effect of preoperative information on postoperative anxiety, (2) the effect uncertainty in patients with total knee arthroplasty(TKA). This study was designed for nonequivalent control group pre-post test in quasi-experimental research. And research data were collected from Apr. 1, 2013 to Sep. 30, 2013. Total of 60 elder patients with TKR were divided into two groups: 30 patients receiving for visual information for anxiety and uncertainty in the experience group (69.4.0±6.1 years, 2 males), and 30 patients without education for visual information for anxiety and uncertainty were placed in the control group (73.7±6.5 years, 5 males). A nonequivalent control group pretest-posttest design was used. The preoperative visual information was effective in the decrease of state anxiety and uncertainty in patients with TKA. The preoperative visual information should be recommended for patients before TKA.

Key words: Preoperative visual information, Total knee arthroplasty, Anxiety, Uncertainty

1 Introduction

Older ages is the incapacity arising from large joint osteoarthritis(OA). Knee OA becomes progressively more common with age, meaning that an ageing workforce will contain a greater proportion of people with joint pathology.

Additionally, the proportion with joint prostheses is rising, in parte because of ageing and in part because of more aggressive approaches to treatment such as total knee arthroplasty(TKR). Uncertainty is " the irritability to determine the meaning of illness-related events". It occurs when patients when patients cannot interpret the illness-related situation due to a lack of sufficient signal. Mishel's Uncertainty Model lists the components of sufficient cues as stimuli frame, cognitive capacity, and structure provided. Older patients are supposed to develop their situation based on stimuli frames. A stimuli frame is composed of symptom patterns, event familiarity, and event congruence. Consistency in degree of symptoms, being familiar with illness

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situations, and consistency between the expected and the experienced in illness-related events from a stimuli frame in patients' cognition. Consequently, having adequate information about the illness situation usually leads to less uncertainty. The ability to interpret the stimuli frame is determined by cognitive capacity and structure provided. Cognitive capacity refer to a person's ability to process the information. Depending on cognitive capacity, patients sense either only limited information or overload information from the stimuli frame. Structure provided refers to the resources available to help patients interpret stimuli frames and consists of credible authority, social support and education. In fact, there are limited studies about anxiety and uncertainty, its consequences for patients undergoing TKR. Therefore, the purposes of this study were to provide visual information on preoperative, intraoperative, and postoperative nursing management to elderly TKR patients and to verify the effects.

2 Methods

2.1 Subjects

This study was conducted as a quasi-experimental study in which a non-equivalent control group pre-post test design was applied because the subjects of this study, who were selected by convenience sampling, were elderly patients over the age of 60, hospitalized in G orthopedics hospitals located in Gwangju Metropolitan City between April 1st and September 30th, 2013 and scheduled to undergo total replacement. The total number of the subjects was 60, including 30 subjects in the experimental group to which visual information providing education was given and 30 subjects in the control group to which the conventional education was given. In order to prevent spread and contamination to the experimental group, the data for the control group were first collected.

The visual information was created after four orthopedists, three head nurses department were consulted. The visual information education was consist of anatomy of knee joint, the TKA outline, preoperative examinations, duration of operation, preoperative care, procedure of operation, postoperative care, rehabilitation, Important notices when patients discharge and re-visiting hospital for follow up for 2times a 2 days, 30-40 minutes each time for preoperative day and postoperative 1day.

2.2 Research tool

Anxiety was measured with a state anxiety inventory developed (STAI) by Spielberger. Uncertainty (The Mishel Uncertainty in Illness Scale : MUIS) was measured with a tool which was revised and improved by Ok-hee Jo. The data

collected in this study was statistically processed with the IBM SPSS Statistics 21.0 statistical software program. A frequency and descriptive statistical analyses were performed to investigate the demographic characteristics of the subjects. The reliability coefficient (Cronbach's alpha) was calculated to test the internal consistency reliability with respect to the preoperative and postoperative anxiety and uncertainty. The pre-homogeneity of the general characteristics and the dependent variables between the two groups were tested by performing a χ^2test and a t-test. The differences in anxiety, uncertainty between the two groups were analyzed by performing a t-test. The differences in the anxiety and uncertainty scores before and after the education between the two groups were analyzed by performing a paired t-test.

3 Results

The patients in each group were comparable in gender, age, education, and month of illness. Two groups did not display any differences in demographic variables. No significant differences were found between two groups in pretest total mean anxiety and uncertainty score in inter groups comparison. No statistically significant difference was found between the groups.

In the experimental group, it was determined that anxiety and uncertainty were 53.50±10.94 and 53.23±5.54.

In the control group, it was determined that anxiety and uncertainty were 48.90±12.56 and 51.47±11.11.

The anxiety score was lower in the experimental group to which pre-operative information was provided compared to the control group to which no pre-operative information was provided ($t=1.513$, $p=0.136$).

The anxiety posttest means of the experimental group applying visual information to patients(27.03±3.64) was statistically higher than the mean value of the control group(37.10±9.65). The anxiety score was lower in the experimental group to which pre-operative information was provided compared to the control group to which no pre-operative information was provided ($t=-5.347$, $p<0.001$).

The uncertainty score was lower in the experimental group to which pre-operative information was provided compared to the control group to which no pre-operative information was provided ($t=0.780$, $p=0.440$).

The uncertainty posttest means of the experimental group applying visual information to patients(27.03±3.64) was statistically higher than the mean value of the control group(37.10±9.65). The anxiety score was lower in the experimental group to which pre-operative information was provided compared to the control group to which no pre-operative information was provided ($t=-5.347$, $p<0.001$).

4 Conclusions

The results of this study show that providing visual information was effective in decreasing postoperative patient anxiety and uncertainty in elderly TKR patients. Therefore, when an elderly patient is hospitalized for TKR, positive and systematic provision of visual information may provide a positive effect by decreasing postoperative patient anxiety and uncertainty.

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