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Effectiveness of video information on coronary angiography patients' outcomes

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KEYWORDS

Coronary angiography;
Hemodynamics status;
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Summary

Background: Coronary angiography is a widely used invasive procedure for diagnosis of coronary artery diseases. The patients benefit from information about an invasive diagnostic procedure.

Objectives: The aim of this study was to evaluate the effects of two educational methods (video information vs. verbal information) on the level of satisfaction, comfort, tolerability and on the heart rate and blood pressure of patients undergoing coronary angiography.

Methods: A randomized controlled trial design was employed in this study. 128 patients candidate for coronary angiography were randomly assigned to experimental ($n=64$) and control ($n=64$) groups. The data were collected from January to April 2009. The experimental group watched an informative video about the procedure of coronary angiography as well as pre- and post-angiography care, while the control group received only routine verbal education by nurses. Heart rate and blood pressure were obtained at baseline and after educational intervention. The levels of comfort, satisfaction, and tolerability were measured after the procedure. Statistical analysis was done using SPSS soft ware (Version, 11.5).

Results: The experimental group showed a statistically significant decrease in the heart rate and blood pressure after the educational intervention compared to the control group ($P < .001$). The patients in the experimental group had significantly higher levels of comfort, satisfaction, and tolerability than the control group ($P < .001$).

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Conclusions: Patients' education using an informative video before coronary angiography can effectively maximize the patients' outcome. The results of this study confirm the usefulness of video information prior to an invasive coronary angiography procedure.
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Introduction

Cardiovascular diseases (CVD) are currently listed as the second leading cause of mortality and morbidity in Iran (Hatmi, Tahvildari, Gafarzadeh Motlagh, & Sabouri Kashani, 2007; Kalyani & Jamshidi, 2010). Coronary artery disease (CAD) is the most common cause of mortality related to CVD (Hatmi et al., 2007; Jamshidi, Abbaszadeh, & Kalyani, 2009). For diagnosis of CAD, coronary angiography (CA) is the gold standard (Chair, Li, & Wong, 2004; Rezaei-Adaryani, Ahmadi, Mohammadi, & Asghari-Jafarabadi, 2009). Currently, CA has become a main diagnostic procedure for diagnosis of CAD performed in many health care centers in Iran (Rezaei-Adaryani, Ahmadi, & Asghari-Jafarabadi, 2009). Nurses play an important role in promotion of the patient's knowledge before an invasive procedure such as CA (Chair et al., 2004; Jamshidi et al., 2009). Due to the lack of knowledge, patients experience anxiety, stress, and consequently hemodynamic instability in response to an invasive CA (Jamshidi et al., 2009; Ruffinengo, Versino, & Renga, 2009). Psychological problems in patients undergoing CA may cause a change in hemodynamic parameters and increase in cardiovascular load that is harmful for such patients (Jamshidi et al., 2009; Ruffinengo et al., 2009). Furthermore, due to prolonged bed rest in a fixed position after the procedure, the patients report feelings of discomfort and intolerance (Chair et al., 2004; Rezaei-Adaryani, Ahmadi, & Asghari-Jafarabadi, 2009). Patient's knowledge may decrease their psychological problems (Chair & Thompson, 2005; Jamshidi et al., 2009), significantly decrease the nursing work load, reduce the hospital stay, and also promote the patients and nurses' satisfaction, comfort and tolerance related to an invasive procedure (Ayral, Gicquere, Duhalde, Boucheny, & Dougados, 2002; Rezaei-Adaryani, Ahmadi, & Asghari-Jafarabadi, 2009). Many studies have shown that the patients benefit from information about an invasive diagnostic procedure (Ayral et al., 2002; Jamshidi et al., 2009; Phillippe et al., 2006; Ruffinengo et al., 2009; Steffenino, Viada, Marengo, & Canale, 2007). There are many methods of patients' education like verbal information, written information, leaflets, booklets, audiotapes, and video information (Ayral et al., 2002; Eaden, Abrams, Shears, & Mayberry, 2002; Jamshidi et al., 2009; Leckie, 1994; Phillippe et al., 2006; Ruffinengo et al., 2009; Steffenino et al., 2007; Walsh, Curtis, & Mylotte, 2004), but an ideal method to be used for patients' education is still unknown. In spite of these methods, the verbal information by nurses and physicians is the common routine for patient's education before CA in many hospitals in Iran (Jamshidi et al., 2009). The impact of video information on the patients' outcomes after CA in our country has not yet been investigated. Furthermore, comparison of the effect of video information vs. verbal information on the levels of comfort,

satisfaction, tolerance, and hemodynamic parameters (heart rate and blood pressure) has not been evaluated yet. Therefore, this study was conducted aiming at evaluating the effect of patient's education via an informative video vs. verbal information on the levels of comfort, satisfaction, tolerance, and hemodynamic parameters including heart rate (HR) and blood pressure (BP) of patients undergoing diagnostic CA. In this study, we considered two hypotheses: (1) patients in the control group (verbal information) have a higher HR and BP than the experimental group (video information); (2) patients in the experimental group (video information) have a greater level of satisfaction, comfort and tolerance than the control group (verbal information).

Methods

Design

In this study, a randomized controlled trial design was employed, using convenient sampling. Recruited patients were randomly assigned to the control and experimental groups. We randomized weeks in which the video information or the verbal information were to be performed. The method of randomization was undertaken to avoid intervention contamination. Simple randomization was used in this study. For the randomization, we numbered the weeks (video information 1, verbal information 2), then the sequence of weeks was drawn up by coin tossing. Fig. 1 shows recruitment of patients and their assignment to the two study groups.

Participants

This study was conducted from January to April 2009 at one university-affiliated hospital in Kerman, Iran. Nine hundred seventy three patients scheduled for CA in the hospital were screened for participation in this study. Inclusion criteria were the age over 25 years, non-emergency CA, informed consent, ability to read and speak Persian, and without history of previous CA. Patients with psychophysical deficits (deafness and blindness) and known past anxiety disorders and with a history of taking psychotropic drugs were excluded from the study. Using the results from previous studies (Phillipe et al., 2006) and HR as the basis of power calculation, a sample size of 54 patients in each group was calculated to detect the differences between the two groups at an α of .05 and power of .80. Regarding the probable decrease of patients, the number of patients in each group was increased to 64.

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