

EFFECTS OF VIDEO INFORMATION ON ANXIETY, STRESS AND DEPRESSION OF PATIENTS UNDERGOING CORONARY ANGIOGRAPHY

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ABSTRACT

Objective: Anxiety and stress are common in patients undergoing invasive procedures. Coronary angiography is a definitive diagnostic evaluation for coronary artery disease and valvular disease. It is necessary to give information to the patients in order to minimize levels of anxiety and stress to this invasive procedure. The aim of this study was to evaluate the effect of patients' education by video on levels of anxiety, stress and depression of patients undergoing coronary angiography.

Methodology: In a quasi-experimental, pretest-posttest design, 128 patients were randomly assigned to either control or experimental group. Control group received verbal routine education by nurses and experimental group received an informative video about coronary angiography procedure as well as pre and post angiography interventions. Using Depression, Anxiety, Stress Scale (DASS-21) levels of these variables were measured before and after education.

Results: Seventy eight (60.9%) males and fifty (39.1%) females participated in the study. There was a statistically significant reduction in the Anxiety, stress and depression levels of experimental group after video information ($P = .000$). There was a statistically significant correlation between sex with anxiety ($P = .000$) and stress ($P = .04$).

Conclusions: The use of patients' education by informative video is a useful method for decreasing psychological parameters of patients undergoing coronary angiography procedure. Results of the study confirm the usefulness of video information prior to an Invasive angiography procedure.

KEY WORDS: Coronary angiography, Patients' education, Depression, Anxiety, Stress.

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INTRODUCTION

Cardiovascular disease, especially coronary artery disease (CAD) is most important cause of mortality and morbidity in the world.¹ Coronary angiography is a definitive and routine diagnostic procedure indicated for the evaluation of cardiovascular diseases such as coronary artery disease and valvular disease.² Coronary angiography like other medical invasive procedure can be a stressful and anxiety-provoking condition for many patients.¹ Anxiety is a state

that a person experiences a sensation of concern, along with activation of the sympathetic system, in response to a vague and unspecified threat.³ Due to anxiety and stress cardiovascular symptoms may appear. High levels of anxiety and stress can cause change in cardiovascular function such as cardiac irritability, increased basal metabolic rate and increased blood pressure.^{1,3} On the other hand, high levels of anxiety and stress cause difficulties during procedure and after hospitalization. The psychological parameters (Depression, anxiety and stress) are related with the procedure, post procedure interventions and fear of possible future cardiac surgery. Unrelieved anxiety and stress can cause serious problem for patients.¹⁻⁵ Furthermore, psychological parameters could provoke transient myocardial ischemia, increase in heart rate, palpitation and chest pain.^{4,5}

Evidence shows that patients candidate for coronary angiography experience anxiety and stress.⁶ Many studies has shown that patients benefit from providing information about invasive diagnostic- therapeutic procedures.^{4,6-8} A common technique is to provide the patients with video information. Evidence showed that there was a reduction in anxiety and stress when patients received information about procedure likely to be experienced during coronary angiography.⁹ However, the ideal tools for providing information are still unclear. Verbal information given by the nurses is the most common method.⁷ A study by steffenino et al showed that a pre-intervention informative video improved some important aspects concerning both during procedure and after procedure.¹⁰ The aim of our study was to evaluate the effectiveness of an informative video versus verbal information on reducing the levels of anxiety, stress and depression of patients undergoing coronary angiography.

METHODOLOGY

A randomized controlled trial (RCT) was chosen. The study was carried out between January and April 2009. All patients with coronary artery disease who were scheduled for coronary angiography in the Shafa educational

hospital affiliated to Kerman medical sciences university were enrolled for this study. According to prior studies and in order to have a power of .80 and a significance of 95%, a sample size of 64 patients per group was estimated.¹¹

Inclusion criteria were age over 25, non emergency coronary angiography, informed consent, ability to read and speak and no history of prior coronary angiography. Exclusion criteria were psychophysical deficits (deafness and blindness) which could inhibit the understanding of the video and reading DAS scale as well as known anxiety disorders and patients who were already taking psychotropic drugs. Subjects were randomly assigned to either an experimental or control group. Patients randomized to a control or experimental group by selecting a randomly generated group number sealed in an opaque envelope. The experimental group received an information video education and the control group received verbal information (usual method in hospital). The video information providing detailed information about function of heart, Coronary artery disease, angiography procedure, recommended behaviors to be followed before, during and after coronary angiography. Usual care method consisted of showing rooms of patients, an interview with nurse, preoperative shave and venous catheter placement and fasting from 8 hours before procedure.

After admission to the ward all patients in two group completed Depression, Anxiety and Stress Scale-21, then patients in control group received verbal information and the patients in experimental group received an informative video. On the next day before going to CATH lab. Depression, Anxiety, and Stress Scale-21 were completed by patients. The depression, anxiety, stress scale 21 (DASS-21) is a widely use scale for measuring Depression, anxiety and stress in adults.

Depression, Anxiety, and Stress Scales (DASS 21) was translated from English to Persian by Aghebati.¹² In the translation process, the researcher assessed reliability and validity. The DASS-21 contained a set of three 4-point Likert-type subscales for self-reporting. Each subscale

Table-I: Demographic characteristics of patients

Groups Variable	Experimental (n = 64)	Control (n = 64)	P value
Age (years)	52.38±10.40	54.08±8.52	†P > .05
Sex (M/F)	59.4 / 40.6%	62.5 / 37.5%	
Body mass index (BMI)	23.94±2.12	24.52±1.84	
Previous hospitalization (Yes/No)	81.3 / 18.7%	78.1 / 29.1%	

† T-test / Chi-square test

consisted of seven items, aimed at assessing depression, anxiety, and stress. Patients were asked to mark the extent to which each statement applied to him or her. There were four possible answers in terms of severity or frequency, organized in a scale from 0 to 3. The result was obtained by adding the scores of the items for each of the three subscales and total scale for the total DASS-21. After data collection statistical analysis was performed to compare Depression, anxiety and stress in the experimental and control groups. Multivariate analysis of variance (MANOVA) and Student's t-test was used for comparing depression, Anxiety and stress. Paired t-test was used for comparison of depression, anxiety and stress before and after intervention in each group. An alpha level of <0.05 was considered significant.

RESULTS

One hundred twenty eight patients participated in the study. There are no statistically significance differences between the two groups

in the socio-demographic and clinical characteristics of two groups (Table-I).

Analysis of baseline data showed that there were no significant differences between the two groups for any of the three subscales of the DASS-21 (P > 0.05) (Table-II).

Data showed that the mean score of Anxiety in experimental group before video information was 6.38±3.70 and in control group was 7.13±3.51. After education the mean score of anxiety in experimental group decreased to 3.30±2.67 while in control group increased to 9.16±4.07. This difference is statistically significant (P= 0.000).

The mean score of stress in experimental and control group were 13.78±4.49, 12.55±3.64 respectively. After education the stress score of experimental group decreased to 8.27±3.18 and for control group was 13.42±3.85. This difference is statistically significant (P= 0.000).

The mean score of depression in experimental and control group were 3.42±2.65, 3.23±1.93 respectively. After education the depression score of experimental group decreased to

Table-II: Effect of video information on Depression, anxiety and stress

Variable Groups	Experimental (n=64)	Control (n=64)	P value
<i>Anxiety</i>			
Before	6.38±3.70	7.13±3.51	0.242
After	3.30±2.67	9.16±4.07	0.000*
<i>Stress</i>			
Before	13.78±4.49	12.55±3.64	0.090
After	8.27±3.18	13.42±3.85	0.000*
<i>Depression</i>			
Before	3.42±2.65	3.23±1.93	0.649
After	2.20±1.88	3.31±1.82	0.001*

* Significant (t-test)

2.20±1.88 and for control group was 3.31±1.82. This difference is also statistically significant (P= 0.001) (Table-II).

Analysis of data with Spearman's correlation coefficient showed that there was a statistically significant correlation between sex with anxiety (P= 0.000) and stress (P= 0.04).

DISCUSSION

Undergoing coronary angiography is very stressful experience for many patients. This study confirms the usefulness and effectiveness of video information prior to coronary angiography. High levels of anxiety and stress can have adverse effects on cardiovascular system.¹ In addition to being unpleasant, there is evidence that it cause catecholamine release and need for anesthetic drugs may be increased.⁸ Kulik et al showed that patients with low level of anxiety were discharged from hospital sooner than more anxious patients.¹³

Stephenino et al in their studies revealed that the video information cause increasing patient education as well as video can greatly increase the levels of satisfaction.¹⁰ The strong points of our study are measuring anxiety, stress and depression immediately on admission, hence it allow pre-post comparisons between the two groups. The anxiety, stress and depression levels in experimental group decreased with watching video but in control group increased before catheterization. The results of similar studies showed that patients who were given detailed information about their anesthetics were less anxious.¹⁴ High levels of stress and anxiety leads to decrease in working memory, thereby increasing anxiety.⁸ Xavier et al showed that the video information could be more effective than verbal information. He showed that video information not only decreases the pre-operative level of anxiety, but can also improve the tolerability to invasive procedures.⁷ Harkness et al confirmed that giving early education to patients while waiting cardiac catheterization decrease anxiety and increase health related quality of life.⁶

As previously reported by many researchers, video information decreases preoperative

anxiety.^{3,7} But our study showed that the video information is useful on reduction of stress and depression of the patients undergoing coronary angiography. The study findings also revealed that a sensory information method for preparing patients is more effective than traditional methods. This study revealed that female patients had highest levels of anxiety and stress than male. Other studies reported similar findings that female patients had higher levels of anxiety before invasive procedures⁸⁻¹⁰. The results of this study show that video information in contrast with verbal information can effectively reduce anxiety and stress of patients before coronary angiography. The evidence that video information is an effective method for decreasing anxiety and stress in patients indicates that video information can be introduced by nurses and physicians during pre-procedure care and that this intervention can be of benefit before procedure. Based on the study findings, we suggest that video information could become an important role of nurses and physicians for decreasing anxiety, stress and depression of the patients.

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