



# Enhancing Stress and Hemodynamic Parameters in Angiography Patients Through the Use of Virtual Reality

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## ABSTRACT

**Introduction:** In the 21<sup>st</sup> century, there has been an increase in the prevalence of chronic diseases, particularly cardiovascular diseases. Coronary angiography is the most definitive diagnostic method for cardiovascular diseases but is invasive, leading to common complications such as anxiety and stress. Various methods exist for controlling anxiety, both pharmacological and non-pharmacological. Due to limited information and varying study results regarding the effectiveness of educational videos in controlling anxiety in patients, our objective was to compare the impact of virtual reality, distraction techniques, and educational videos on the anxiety and hemodynamic parameters of patients scheduled for cardiac angiography.

**Methods and Materials:** In this clinical trial, 90 patients scheduled for angiography at the heart clinic of Razi Hospital in Birjand in 2020 were enrolled. Patients were randomly assigned to three groups: control, distraction film, and educational film, using a simple (blocked) method. Before the intervention (the night before) and one hour prior to angiography (after the intervention), the patient's anxiety levels (assessed via the Spielberger questionnaire) and hemodynamic factors were evaluated by the study leader. Subsequently, the data were entered into SPSS software version 22 and analyzed using Mann-Whitney, Kruskal-Wallis, and Wilcoxon statistical tests.

**Results:** There were no significant differences in the mean age and gender frequency distribution of the patients ( $p = 0.05$ ). The mean overt and covert anxiety, mean diastolic blood pressure, heart rate, and respiration rate were not significantly different between the groups before the intervention, nor were the diastolic and systolic blood pressure, heart rate, and respiration rate ( $p = 0.05$ ). However, the mean overt and covert anxiety post-intervention and the mean systolic blood pressure pre-intervention were significantly different among the three groups ( $p = 0.05$ ).

**Conclusion and Discussion:** Educating and informing patients about angiography through educational videos reduces patient anxiety before the procedure.

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