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The Effect of Music Played During the Angiography Procedure on Patients' Anxiety Levels and Vital Signs

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Yuksekt Ihtisas University

Faculty of Health Sciences

Department of Nursing

# **The Effect of Music Played During the Angiography Procedure on Patients' Anxiety Levels and Vital Signs**

## **Research Summary**

This study was conducted to determine the effect of music played during the angiography procedure on patients' anxiety levels and vital signs. The study was designed as a quantitative, experimental, pretest–posttest randomized controlled trial. Stratified randomization was applied, and patients were assigned to groups according to risk factors including physician, gender, and age. The randomization process was carried out in accordance with the principle of probabilistic assignment. Participants were allocated to the intervention and control groups using a computer-assisted simple randomization method, and the online randomization tool [www.randomizer.org](http://www.randomizer.org) was used.

The study was carried out between June 2025 and November 2025 with patients who applied to the cardiology outpatient clinic of Private 100th Year Hospital and were scheduled to undergo angiography. The study was conducted in the Angiography Unit of the same hospital, and the necessary institutional permissions were obtained prior to data collection.

## **Aim**

The aim of this study was to examine the effect of listening to music during the angiography procedure on patients' anxiety levels and vital signs.

## **Research Hypotheses**

H01: Music had no effect on reducing anxiety levels in patients undergoing angiography.

H11: Music had an effect on reducing anxiety levels in patients undergoing angiography.

H02: Music had no effect on vital signs in patients undergoing angiography.

H12: Music had an effect on vital signs in patients undergoing angiography.

## **Method**

This study was conducted as a quantitative, experimental, pretest–posttest randomized controlled trial.

## **Study Setting and Permission Status**

The study was conducted in the Angiography Unit of Private 100th Year Hospital. The necessary institutional permission for the study was obtained prior to data collection.

### **Study Sample**

The study sample consisted of patients who applied to the cardiology outpatient clinic of Private 100th Year Hospital, were scheduled for angiography, and met the study inclusion criteria. Prior to the study, a power analysis was performed using G\*Power version 3.1.9.7 to determine the required sample size. Based on an alpha level of 0.05, an effect size of 1.05, and a statistical power of 0.95, the analysis indicated that a minimum of 25 participants in the intervention group and 25 participants in the control group, for a total of 50 participants, was required. The sample size calculation was supported by Prof. Dr. Bülent Çelik from the Faculty of Science, Department of Statistics, Gazi University.

### **Data Collection Procedure**

After preoperative ECG recording, patients in both the intervention and control groups who met the inclusion criteria completed the Personal Information Form, the Hospital Anxiety Scale, and the Distress Thermometer as pretest measures. Vital signs were measured and recorded using the Vital Signs Monitoring Form. For patients in the intervention group whose preparations were completed and who were admitted to the angiography unit, selected music was played via a wireless Bluetooth speaker, and the music intervention continued throughout the angiography procedure. Patients were informed that they could control the volume of the music at any time, including increasing or decreasing the volume, stopping the music, or restarting it. To avoid interrupting communication with healthcare personnel, headphones were not used. Patients in the control group underwent the angiography procedure according to the hospital's routine clinical workflow without any additional intervention.

During the intraoperative period, anxiety levels of patients in both groups were assessed using the Distress Thermometer, and vital signs were recorded. Fifteen minutes after the completion of the procedure, posttest assessments were conducted by re-administering the Hospital Anxiety Scale and the Distress Thermometer, and vital signs were re-measured and recorded using the Vital Signs Monitoring Form.

### **Statistical Analysis**

Data analysis and table preparation were performed using SPSS version 28. Quantitative variables were presented as mean  $\pm$  standard deviation or median and interquartile range, while qualitative variables were presented as frequency and percentage. Student's t-test and one-way analysis of variance were used when parametric test assumptions were met, whereas the Mann–

Whitney U test and the Kruskal–Wallis H test were applied when parametric assumptions were not met. To compare repeated measurements obtained from the intervention and control groups at pre-procedure, intra-procedure, and post-procedure time points, a two-way repeated measures analysis of variance was used. Pearson or Spearman correlation analyses were conducted to examine relationships between variables, and a p-value of less than 0.05 was considered statistically significant.

### **Inclusion Criteria**

Patients aged 18–65 years, literate patients, and patients who voluntarily agreed to participate in the study were included.

### **Exclusion Criteria**

Clinically unstable patients, patients scheduled for emergency angiography, patients with hearing impairment, patients who had used analgesic, anxiolytic, or sedative medications prior to the procedure, patients unable to communicate in Turkish, and patients with a psychiatric diagnosis were excluded from the study.

### **Ethical Considerations**

Ethical principles were strictly followed throughout the study. Institutional permission was obtained, and informed consent was secured from all participants prior to data collection.

### **Results and Conclusions**

As a result of the study, anxiety levels of patients in the intervention group were lower than those in the control group, and vital signs showed more stable and favorable changes in the intervention group. The music intervention was found to be an effective, feasible, and low-cost nursing intervention for reducing anxiety levels and maintaining vital signs within normal limits.