The impact of non-pharmacological approaches on the patient’s comfort after a cardiac surgery: A randomized controlled trial.

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INTRODUCTION: Different non-pharmacological techniques including hypnosis, music, and virtual reality (VR) are being used as complementary tools in the treatment of pain. A new technique which encompasses a combination of hypnosis and VR, called "virtual reality hypnosis" (VRH), should soon be used on a regular basis in clinical settings. The aim of this study is to better understand the impact of hypnosis, music, VR and VRH, and to investigate their influence on the patient’s perception of pain, anxiety and tiredness after a cardiac surgery in intensive care unit.

METHODS: 25 adults undergoing cardiac surgery were included in the study (mean age= 66 years, SD 13 years, 20 men, 5 women). Exclusion criteria were patients with psychiatric diseases, suffering from claustrophobia, acrophobia, and with heavy hearing or visual impairment. Patients were assigned randomly to 5 conditions (control, hypnosis, music, VR and VRH). Each patient received three 20 minutes’ sessions of one of the 5 techniques. The first session was before surgery and the other 2 sessions took place the day after surgery. Blood pressure, heart and respiratory rates were recorded and patients completed the Dissociation Questionnaire1 and a Visual Analogical Scale (0-10) to measure their level of anxiety, tiredness and pain.

RESULTS: Results showed a normally distributed participants’ tendency to dissociation (X̅=13.7, SD=10.21). During the preoperative phase, the hypnosis group (n=5) showed a significant decrease on the mean blood pressure (p=0.0154); and the music group (n=5) displayed a significant effect on the heart rate (p=0.0087) and the mean blood pressure (p=0.0446) compared to the control group (n=5). In the postoperative phase, the hypnosis group (n=3) showed a significant decrease on the mean blood pressure (p=0.0437) compared to the control group (n=4). An ANOVA analysis with repeated measures before/after the use of a tool and before/after the surgery displayed a significant effect on tiredness for the hypnosis and the music group (respectively p=0.0324; p=0.0167) compared to the control group. All other effects were non-significant. We do not have enough data for the VRH conditions (n=1) yet due to participants’ dropout.

CONCLUSION: Non-pharmacological approaches seem to have a positive impact on different parameters amongst heart surgery patients. More patients are required to confirm these preliminary results. We plan to recruit 125 patients. This study will enable us to gain further knowledge by comparing the influence of non-pharmacological approaches on the patient’s well-being.

1Bernstein, E. M., Putnam, F. W. 1986.  Development, reliability, and validity of a dissociation scale. *Journal of Nervous Mental Diseases, 174*(12), 727-735.