

ASSESSMENT OF ANXIOLYTIC AND STRESS REDUCING EFFECT OF A MUSIC INTERVENTION DURING THE CAESAREAN SECTION

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Abstract

Background: To assess anxiolytic and stress reducing effect of a music intervention during the caesarean section. **Materials and Methods:** Two-hundred pregnant women age ranged 18- 38 years were divided into 2 groups of 100 each. Group I patients heard music via loudspeakers and group II had standard treatment without music. The impact of music during caesarean delivery on anxiety and stress was measured by State-Trait Anxiety Inventory (STAI), a visual analogue scale depicting anxiety (VAS-A). **Results:** The mean age in group I patients was 33.2 years, weight was 64.2 kgs, height was 1.67 meters and BMI was 23 kg/m² and in group II patients was 31.5 years, 65.1 kgs, 1.68 meters and BMI was 23.1 kg/m². Pain (VAS) score during procedure was 58.2 and 52.3 and after procedure was 27.6 and 31.4 in group I and II respectively. STAI 1 score during procedure was 40.5 and 42.1 and after procedure was 33.2 and 35.7 in group I and II respectively. Heart rate (bpm) during procedure was 82.5 and 83.1 and after procedure was 80.3 and 82.7 in group I and II respectively. The mean blood pressure (mm Hg) during procedure in group I patients was 134.6/78.4 and in group II was 138.4/80.2 and after procedure was 112.6/74.2 and 130.2/76.4 respectively. The mean respiratory rate (cycles/min) during procedure was 18.2 and 17.6 and after procedure was 13.4 and 15.4 in group I and II respectively. Patient satisfaction was very satisfied seen in 46 each in both groups, satisfied in 34 and 30, normal in 12 and 14 and dissatisfied in 8 and 10 in group I and II respectively. The difference was significant (P< 0.05). **Conclusion:** There was positive effect of music regarding pain, anxiety or satisfaction in caesarean sections.

INTRODUCTION

Stress and anxiety during pregnancy and childbirth have negative consequences for both mother and child. There are indications that music has a positive effect in this situation. Thus, it is the most common abdominal surgery and one of the most common operations. Although the circumstances in almost all cases give cause for joy, it is also a feared event, which is associated with a significant level of stress for the patient.^[1,2]

Studies have shown adverse effects of maternal stress on the foetus and on psychological development later in life.^[3,4] In addition, it is known that increased levels of stress and anxiety can negatively affect pain perception and the usage of analgesics postoperatively.^[5,6] as well as the new

mothers lactation.^[7,8] In view of the limited pharmacological options of intervention for pregnant women, the need for alternative, low-risk approaches to positively influence anxiety and stress arises. In this regard, the positive effect of music on anxiety and stress is one of the oldest treatment approaches. Its positive influence in various medical interventions across all disciplines has been repeatedly examined. Musical therapy is a type of therapy which is performed under a regular method by adjusting the physiological and psychological effects of musical tones and melodies in accordance with various situations.^[9,10] Therefore, the aim of the present study was to systematically examine the anxiolytic and stress reducing effect of a music intervention during the caesarean section on the wake patient using validated questionnaires

MATERIALS AND METHODS

After considering the utility of the study and obtaining approval from ethical review committee, we selected two- hundred pregnant women age ranged 18- 38 years. Patients' consent was obtained before starting the study. Inclusion criteria was women age ranged 18- 38 years, having given a live birth and having no hearing impairment. Exclusion criteria was having given a stillbirth and having hearing impairment.

Data such as name, age, etc. was recorded. Patients were divided into 2 groups of 100 each. Group I patients heard music via loudspeakers and group II had standard treatment without music. The impact of music during caesarean delivery on anxiety and stress measured by State-Trait Anxiety Inventory

(STAI), a visual analogue scale depicting anxiety (VAS-A).

The STAI comprised of 40 self-report items pertaining to anxiety. It distinguishes between two questionnaires with 20 items each, one measuring anxiety perceived in the current situation (STAI-state) and the other evaluating a general tendency towards anxiety (STAI-trait). Patients were asked to give a response to each item on a 4-point Likert scale. Higher scores reflect higher levels of anxiety. The VAS-A comprises a 10 cm line, on which the participant marks her current degree of anxiety with the left end of the line being labelled "no anxiety" and the right end being labelled "maximum anxiety". The results were compiled and subjected for statistical analysis using Mann Whitney U test. P value less than 0.05 was set significant.

RESULTS

Table 1: Patients characteristics

Groups	Group I	Group II
Age (years)	33.2	31.5
Weight (Kgs)	64.2	65.1
Height (m)	1.67	1.68
BMI (Kg/m ²)	23.0	23.1

The mean age in group I patients was 33.2 years, weight was 64.2 kgs, height was 1.67 meters and BMI was 23 kg/m² and in group II patients was 31.5 years, 65.1 kgs, 1.68 meters and BMI was 23.1 kg/m² [Table 1].

Table 2: Comparison of parameters

Parameters	Variables	Group I	Group II	P value
Pain (VAS)	During procedure	58.2	52.3	0.02
	After procedure	27.6	31.4	
STAI I score	During procedure	40.5	42.1	0.04
	After procedure	33.2	35.7	
Heart rate (bpm)	During procedure	82.5	83.1	0.05
	After procedure	80.3	82.7	
Blood pressure (mm Hg)	During procedure	134.6/78.4	138.4/80.2	0.04
	After procedure	112.6/74.2	130.2/76.4	
Respiratory rate (cycles/min)	During procedure	18.2	17.6	0.87
	After procedure	13.4	15.4	
Patient satisfaction	Very satisfied	46	46	0.91
	Satisfied	34	30	
	Normal	12	14	
	Dissatisfied	8	10	
	Very dissatisfied	0	0	

Pain (VAS) score during procedure was 58.2 and 52.3 and after procedure was 27.6 and 31.4 in group I and II respectively. STAI I score during procedure was 40.5 and 42.1 and after procedure was 33.2 and 35.7 in group I and II respectively. Heart rate (bpm) during procedure was 82.5 and 83.1 and after procedure was 80.3 and 82.7 in group I and II respectively. The mean blood pressure (mm Hg) during procedure in group I patients was 134.6/78.4 and in group II was 138.4/80.2 and after procedure was 112.6/74.2 and 130.2/76.4 respectively. The mean respiratory rate (cycles/min) during procedure was 18.2 and 17.6 and after procedure was 13.4 and 15.4 in group I and II respectively. The difference was significant (P< 0.05). Patient satisfaction was very satisfied seen in 46 each in both groups,

satisfied in 34 and 30, normal in 12 and 14 and dissatisfied in 8 and 10 in group I and II respectively. The difference was significant (P< 0.05) [Table 2].

DISCUSSION

Gynecological surgeries are medical procedures performed on the female reproductive system. Typically, during surgical procedures, music may be played in the operating room to help create a more relaxed and comfortable environment for both the patient and the surgical team. However, the choice to play music and the specific genre or songs played during gynecological surgeries can vary depending

on the preferences of the surgical team and the patient.^[11]

The primary focus during gynecological surgeries is the well-being and safety of the patient. Music is often used as a means to create a calming atmosphere and help distract the patient from the surgical process. It can help reduce anxiety and promote a more positive experience. The selection of music during gynecological surgeries is subjective and can vary widely. Surgeons and operating room staff may choose to play soft instrumental music, classical music, or even the patient's favorite songs if it aligns with the surgical environment and the patient's comfort.^[12,13] However, the specific effects of music on the surgical outcome or the patient's physiological response during gynecological surgeries have not been extensively studied. It's important to note that the priority in gynecological surgeries is the surgeon's concentration and focus on the procedure, as well as the patient's safety and well-being.^[14,15] Music is generally used as an ancillary measure to enhance the overall experience, but it is not considered a critical component of the surgical process itself.^[16] The ultimate goal is to ensure a successful surgery and the best possible outcome for the patient.^[17] The aim of the present study was to systematically examine the anxiolytic and stress reducing effect of a music intervention during the caesarean section on the wake patient using validated questionnaires.

In our study, the mean age in group I patients was 33.2 years, weight was 64.2 kgs, height was 1.67 meters and BMI was 23 kg/m² and in group II patients was 31.5 years, 65.1 kgs, 1.68 meters and BMI was 23.1 kg/m². Mk et al. ^[18] measured the positive effect of music in gynaecological office procedures. No positive effect of music on patients' perception of pain during the procedure was measured, neither for the hysteroscopy group (57 mm vs. 52 mm) nor for the colposcopy group (32 mm vs. 32 mm). Secondary outcomes were also similar for both groups. This study showed no positive effect of music on patients' level of pain, anxiety or satisfaction of patient or doctor for office hysteroscopy and colposcopy.

Our results showed that pain (VAS) score during procedure was 58.2 and 52.3 and after procedure was 27.6 and 31.4 in group I and II respectively. STAI 1 score during procedure was 40.5 and 42.1 and after procedure was 33.2 and 35.7 in group I and II respectively. Heart rate (bpm) during procedure was 82.5 and 83.1 and after procedure was 80.3 and 82.7 in group I and II respectively. The mean blood pressure (mm Hg) during procedure in group I patients was 134.6/78.4 and in group II was 138.4/80.2 and after procedure was 112.6/74.2 and 130.2/76.4 respectively. The mean respiratory rate (cycles/min) during procedure was 18.2 and 17.6 and after procedure was 13.4 and 15.4 in group I and II respectively. Patient satisfaction was very satisfied seen in 46 each in both groups, satisfied in

34 and 30, normal in 12 and 14 and dissatisfied in 8 and 10 in group I and II respectively. Saba et al.^[19] assessed whether or not music therapy decreases anxiety levels in pre-operative caesarean section patients. Patient outcomes were measured using a Visual Analog scale (VAS), Mood State Scale, and the Zung Self Rating Anxiety Scale (SAS). All three RCTs showed statistically significant improvement in anxiety levels in the experimental group after interventional music therapy.

In Kushnir et al.'s Israeli study.^[20], the patients were chosen from the waiting room prior to their procedure and divided into experimental and control groups. All patients answered a self-reported questionnaire that involved positive (cheerful, satisfied, energetic etc.) and negative emotions (anxious, depressed, worried etc.) and had vital signs taken. When it was near time for their procedure, patients were isolated and then those receiving music intervention were given Discman's with their choice of light pop, light classical, or Israeli pop music. During the experiment, the two patients who chose classical music were removed from the group to account for potential music bias, leaving twenty-eight patients in the experimental group. After forty minutes have elapsed, questionnaires and vital signs were taken immediately prior to entering surgery. Music group were more satisfied as compared to control group and they had less pain score. Eren et al.^[21] also noted that patient satisfaction with music genre may contribute to data in both a positive or negative way and perhaps including their satisfaction as a qualifier when calculating data may be needed in the future.

CONCLUSION

There was positive effect of music regarding pain, anxiety or satisfaction in caesarean sections.

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