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"A STUDY OF EFFECTS OF INDIAN OLD FILMY MUSIC ON ANXIETY AND PHYSIOLOGICAL VARIABLES IN PATIENTS UNDER SPINAL ANAESTHESIA"

Anaesthesiology

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ABSTRACT

Aims and objectives: The aim of this study was to evaluate the effect of indian old filmy music therapy on level of anxiety and physiological variables in patients under spinal anesthesia..

Methodology: 90 Patients undergoing elective surgeries under spinal anaesthesia in Shushrusha Hospital between June 2012 to June 2015 were included in this semi-experimental research, aged 18-48 years with ASA (American Society of Anesthesiologists) class I, who underwent urological and abdominal surgery. Patients were randomly divided into three groups of 30, Music group (headphone with music), Silence group (headphone without music) and control group (without interference).

Results: There were significant differences after intervention in the levels of anxiety and systolic blood pressure between music group and the other two groups ($p<0.05$). There were no significant differences in respiratory rate and diastolic blood pressure in the three groups.

KEYWORDS

music, anaesthesia.

Introduction:

Surgery is a cause of stress and concern for any individual. Most surgical procedures cause fear and anxiety with increasing heart rate, blood pressure and other changes on patients, which can negatively affect the induction of anesthesia and then recovery process [1-3]. Spinal anesthesia is created with spinal nerve block in subarachnoid space by the local anesthetic solution. The use of spinal anesthesia is currently on the rise [4]. The side effects of these drugs are suppression of cardiovascular and respiratory systems that threatens patients [5].

Nowadays, the tendency to use non pharmacological methods for relieving pain and anxiety is on the rise. One of these methods is the use of pleasant audio stimuli as music therapy [6]. Music as a non-pharmacological nursing intervention is cheap, non-invasive and without side effects that can be used as a complementary method to reduce patient anxiety [7-9]. Since music is able to establish and enhance positive feelings in people; so these effects potentially can be used on clinical fields (relief of pain and anxiety). The music can reduce stress before, during and after medical procedures such as surgery, Angiography and colonoscopy [10]. Studies have shown that relaxation music reduces sympathetic nervous system activity [11].

Many studies have been done about the effect of music on patients' pain and anxiety, before and after surgery, but limited studies have been done about the effect of music during spinal anesthesia. There is no study in our country about the effect of our own old hindi film songs music during the spinal anesthesia or at least it's not available. The results of some studies have shown that the use of music before anesthesia has positive and satisfactory effects on patients [12]. Hence we conducted this study.

Materials and methods:

The study was done in Shushrusha Hospital between June 2012 to June 2015 In this semi-experimental research was studied the effect of independent variable of music therapy on dependent variables of anxiety and hemodynamic status in patients under spinal anesthesia .This study was conducted on 90 men, aged 18-48 years with ASA (American Society of Anesthesiologists) class I, who underwent urological and abdominal surgery. Patients were randomly divided into three groups of 30, Music group (headphone with music), Silence group (headphone without music) and control group (without interference). Sample size was determined at least 18 people in each group from the research community by using anxiety comparison before and after the intervention in group1 and statistical formula with 95% confidence level. To compensate the potential loss of samples, 12 people were added in each group and finally 30 people were studied in each group. Respiratory rate were observed and recorded by the researcher.

Patients listened to music by headphones from 6 minutes after spinal anesthesia to one minute before closing the surgical wound [16]. For music therapy was used wireless phone (headphone) and Marshall Company MP3 player and relaxing music for group 1. Music playback time as well as time and type of surgery were recorded for each patient. For Patients in group 2 was used the headphones without music to block out the sounds of the operating room and the control group received no intervention. Half an hour after the operation, Spielberger questionnaire was given again to the patients for assessing the post operative anxiety. In this study was used soft music of Johann Sebastian Bach [17]. Volume control and track switching were given to patients. The data was analyzed by using SPSS software and descriptive - inferential statistics including frequency distribution tables, chi-square test, paired Samples T-Test, Kruskal-Wallis, one-way ANOVA and repeated measures ANOVA.

Results:

(61.1%) of all subjects were single. The mean age was 23.83 ± 6.20 years. Minimum and maximum age respectively was 18 and 45 years. According to the research community, the samples were homogeneous in terms of marital status, occupation, education, economic status and type of surgery and there was no significant difference ($p>0.05$). (Table1). Comparing the mean anxiety score was performed by using ANOVA in the three groups before the intervention. There was no significant difference between the three groups ($p= 0.88$). But there was significant difference in the mean anxiety score in the three groups after the intervention. ($p=0.03$) (Table2). Then, the groups were compared pairwise by using the post-hoc Tukey's test and it was found that the mean anxiety score in the music group compared with the other two groups, shows a significant decrease. While there was no significant difference between the Silence group and control group (Table 3).

Discussion:

Many studies have been done on the effect of music as a complementary medicine. The majority of them emphasize on reducing costs and adverse effects in the intervention groups [18-20]. The results showed, something that is effective in reducing anxiety during surgery is music not blocking the sounds of operating rooms. This implies the influence of music in reducing anxiety during the surgery. The findings of this study is compatible with the findings of Maeyama [15], Wong [19], Han [7] and also Lee researches (2011) [1, 13] about the effect of music on preoperative anxiety of patients. In this study music was effective on the reduction of intraoperative systolic blood pressure, as well as postoperative systolic blood pressure and pulse rate; whereas no significant change was in diastolic blood pressure and respiratory rate. Bansal and colleagues in 2010 evaluated the effect of music on using sedative drugs and physiological variables

during spinal anesthesia. Their study showed that music leads to decrease mean arterial blood pressure and heart rate in music group than in control group [5]. Alemrud and colleagues in 2003 performed a research as music therapy in mechanically ventilated patients in intensive care unit. Their results showed that the mean systolic and diastolic blood pressure and pulse rate had significant reduction in the intervention group during music therapy.

But the mean respiratory rate was similar in both groups and no change was observed in the intervention group [20]. Alemrud believes music effect on the brain and stimulate the brain's alpha waves and lead to secretion of endorphins and by creating relaxation, cause to reduce the fear and anxiety. Also the secretion of endorphins reduces physiological responses such as blood pressure, respiratory rate and heart rate [20]. Smolen justified the changes in physiological parameters which were because of listening to music with regard to Roy's adaptation model and say that music can help patients to have physiological adaptations with medical conditions[21]. This study showed that music therapy especially our old hindi filmy songs can have positive effects on patients' anxiety and some vital signs. So, In order to improve the quality of health care services to patients, hospital administrators are recommended to use non- pharmacological methods such as music therapy along with other therapies to relieve pain and anxiety that are also effective on vital signs and are without side effects.

Conclusion:

The results showed that music especially old hindi filmy songs are effective on reducing anxiety and improving the hemodynamic status of patient under spinal anesthesia. By considering the benefits of music such as easy access, simplicity, low costs and Safety compared with pharmaceutical methods, is recommended to use music as a complementary method for reducing intraoperative anxiety in patients under spinal anesthesia.

TABLE 1: Sociodemographic characteristics of patients

	Music group(n=30) Frequency(percent)	Silence group(n=30) Frequency(percent)	Control group(n=30) Frequency(percent)	P value
Marital status				
Single	19 (63.3%)	18 (60%)	18 (60%)	NS*
Married	11 (36.7%)	12 (40%)	12 (40%)	
Level of education				
Primary school	5 (16.7%)	6 (20%)	4 (13.35)	
The Junior School	8 (26.7%)	9 (30%)	5 (16.7%)	
High school	12 (40%)	8 (26.7%)	12 (40%)	NS*
advanced	5 (16.7%)	7 (23.3%0	9 (30%)	
Employment Status				
Worker	4 (13.3%)	4 (13.3%)	3 (10%)	
Employee	8 (26.7%)	7 (23.3%)	8 (26.7%)	NS*
Self-employed	11 (36.7%)	11 (36.7%)	11 (36.7%)	
Unemployed	7 (23.3%)	8 (26.7%)	8 (26.7%)	
Economic situation				
Weak	22 (73.3%)	20 (66.7%)	21 (70%)	
Middle	7 (23.3%)	9 (30%)	8 (26.7%)	NS**
Good	1 (3.3%)	1 (3.3%)	1 (3.3%)	
Types of surgery				
Abdominal	5 (16.7%)	4 (13.3%)	5 (16.7%)	NS*
Urology	25 (83.3%)	26 (86.7%)	25 (83.3%)	

Table 2 showing average anxiety before and after the interference in all 3 groups.

	Music group (Mean ± SD)		Silence group (Mean ± SD)		Control group (Mean ± SD)		One-way ANOVA	
	Before	After	Before	After	Before	After	Before	After
The level of anxiety	41.46 ± 8.79	35.70 ± 6.50	42.36 ± 10.15	40.96 ± 7.22	41.20 ± 10.17	40.80 ± 11.31	p=0.88	p=0.03

Table 3 showing Comparison of mean and standard deviation of pre- and postoperative physiologic variables in patients undergoing spinal anesthesia in three groups

	Music group (Mean ± SD)		Silence group (Mean ± SD)		Control group (Mean ± SD)		One-way ANOVA	
	Before	After	Before	After	Before	After	Before	After
Systolic blood pressure	134.70 ± 13.63	115.27 ± 6.58	133.93 ± 13.67	126.80 ± 12.23	130 ± 9.90	120.00 ± 9.49	P=0.308	P=0.000*
Diastolic blood pressure	75.90 ± 7.24	64.60 ± 6.44	77.53 ± 9.34	69.60 ± 8.92	74.13 ± 11.37	68.16 ± 1.04	P=0.384	P= 0.081
Pulse	82.23 ± 6.43	71.23 ± 12.04	86.43 ± 14.85	80.60 ± 10.90	84.70 ± 15.37	78.60 ± 16.20	P=0.450	P=0.019*
Respiratory rate	18.96 ± 2.25	17.10 ± 1.98	18.83 ± 2.13	18.26 ± 2.14	19.03 ± 2.53	18.23 ± 2.07	P=0.944	P= 0.051

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