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Effect of Music Therapy on Post-Operative Pain Management among Abdominal Surgery Patients in a Selected Hospital of Guwahati, Assam

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Abstract: ***Background: Music has been used since ancient times to enhance and reduce pain and suffering. Playing music for patients during or after surgery helps reduce pain and use of morphine and other sedatives, anxiolytic and analgesics. Despite advances in post-operative pain control, it is a still big challenges with prevalence for practitioner. Aim: to determine the effect of music therapy in post operative pain management among abdominal surgery patients. Methods: a true experimental research design was used to select subject 30 experimental and 30 control group by simple random sampling at Guwahati Medical College and Hospital, Assam. Pre test was conducted by visual analogue scale after obtaining consent, music therapy given 5-10 mins twice a day for 2nd and 3rd post-operative day in experimental group. Post-test was assessed in both group by using visual analogue scale. Result: In experimental group patients post-operative pain level was significantly lower compare with control group (4.40+_1.380 vs 5.93+_1.285). Conclusion: the study concluded that after administration of music therapy, there was a significant improvement of post operative pain management. Music therapy found to be effective for post-operative pain management among patients.***

Keywords: Effect, Music Therapy, Post-operative pain, Abdominal surgery

1. Introduction

Pain is complex phenomenon. It is a mixture of physical, emotional and behavioural reaction "one way to gain understanding of pain experience is to conceptualize pain as a process made up three physiological step that is perception, reception and reaction". After abdominal surgery, pain may be the post-operative complication which create an unpleasant sensory and affective experience leading to prolong hospitalization and recovery. Pain is not always controlled by prescribed analgesics. To augment or decrease intake of medication, patient may use selfcare method like listing to soothing music and other relaxation measures. Pain is defined as multidimensional phenomenon. Management of pain include pharmacological and nonpharmacological approaches as alternative therapies. Some of this are relaxation, guidance imaginary, music, distraction, yoga, acupressure, massage etc. The present trends in nursing profession using nonpharmacological intervention for relieving pain. This study being one of such attempts has considered examining the efficacy of music therapy in order to minimize post-operative pain.1

Inadequate control of post-operative pain is common problem and it also can lead to serious complication for patients. These complications are like deep vein thrombosis, urinary retention, cardiac pulmonary adverse consequence, GI dissatisfactions, depress and anxiety and also sleep disturbances.2

The researcher Kneafeseay R. stated from various studies, that music to be unique, in that it could penetrate both the mind and the body directly, whatever the individuals' intelligence or condition. More over the researcher added that music acts to stimulate the senses, evolving feelings and emotions, it also causes physiological and mental responses and energies the body and mind. The researcher recommended more research to measure the actual effects and benefits of music therapy in specific conditions.3

2. Objectives

- To assess the level of post-operative pain among abdominal surgery patients in experimental group and control group.
- To evaluate the effectiveness of music therapy on post-operative pain among abdominal surgery patients in experimental group
- To compare the post-test level of post-operative pain among abdominal surgical patients in experimental group and control group

3. Literature Survey

Estele Mwanza, Reginald Dennis Gwisai and Chiratidzo Munemo (2019), a quantitative descriptive study, which conducted with aim to assess the knowledge on nonpharmacological methods of pain management among register general nurses at Bindura hospital. The study used a descriptive study design, which is non experimental research design so as to obtain information about registered nurses knowledge regarding non pharmacological pain management. The study showed that the nurses have poor knowledge regarding nonpharmacological pain management as indicated by the mean knowledge score of 48.6% against pass mark 50% and a recommended knowledge score 80% as observed by previous knowledge.4

Wang-Sheng Dai, et al (2020), conducted a retrospective study to evaluate the effect of music therapy on pain, anxiety and depression of 99 patients after coronary artery bypass from January 2017 to January 2019 was conducted in a cardiac in China. According to different intervention all the participant were divided into 3 groups: group A: music therapy, group B: rest without music therapy, group C: Conventional treatment. The Numerical Rating Scale, Self Rating Anxiety Scale and Self Rating Depression Scale were used to measure the patient's pain, anxiety, and depression before and after 30 mins of intervention. The author concluded that music therapy can effectively alleviate the pain, anxiety and depression of patients after coronary artery bypass grafting.5

EahanGokeck, AyhanKaydu, (2019), conducted a randomized study to effects of music therapy in patients undergoing septorhinoplasty surgery under general anesthesia.120 patients undergoing septorhinoplasty within a 2 months period. The patients were randomly divided into 2 group: group music (music during surgery) and control group (without music during surgery). There were no statistically significant difference the groups in terms of demographic characteristics, anesthesia and surgery duration. In music group, sedation agitation score were lower than those in the control group at the postoperative period (3.76 ± 1.64 vs.5.11 ± 2.13: p<0.001). In addition; in patients of music group the pain level (2.73 ± 1.28 vs.3.61 ± 1.40) was lower (p<0.001), requiring less analgesic drugs intake. The study concluded that music therapy, which is a nonpharmacological intervention is an effective method, without side effects, leading to positive effects in the awakening, hemodynamic parameters and analgesics requirements in the postoperative period. It is also effective in reducing the anxiety and intraoperative awareness episodes of surgical patients.6

Schneider, Melissa A (2016), conducted a descriptive, quasi experimental study. Patients listened to pre recorded music on individual CD players and recorded pre – post pain scores with the intervention. A satisfactory survey was completed at discharge. Result demonstrated a statistically significant reduction in patient's pain scores after listening music. Length of listening time had no effect. Patient expressed overall satisfaction, and 100% of participant would recommend this intervention to others. It is hoped that the information gained from this study will lead to an enhancement in the standard of care for postoperative patients.7

Mohamed Kahloula, et al (2016), this is a prospective, randomized, double blinded study to evaluate the effect of music therapy under general anaesthesia in patient undergoing abdominal surgery conducted in the operating theatre of visceral surgery at Sahloul teaching hospital over a period of 4 month. They are randomly allocated into 2 groups: Group M (with music during surgery) and group C (without music). Hemodynamic parameters, quality of arousal, pain experience, patient's satisfaction, and awareness incidence during anaesthesia were recorded. A calm recovery was more often noted in group M (77.1% versus 44%, p<10-3). The average visual analogue scale (VAS) score was lower in the intervention group (33.8 ±13.63 versus 45.1 ± 16.2 p<10-3). The satisfaction rate was significantly higher among the experimental group (81.4% versus 51.45, p<10-3). The author concluded that music therapy is non pharmacological, inexpensive, and non invasive technique that can significantly enhance patient satisfaction and decrease patients' embarrassing experiences related to perioperative stress, pain and awareness.8

4. Methods\ approach

Research approach: Evaluative
Research design: True experimental research design-pre test post test control group research design

Variables:
Dependent variables: post-operative pain
Independent variables: Music therapy
Setting of the study: The study was conducted in postoperative ward in Guwahati Medical college and hospital, Guwahati, Assam

Population:
Target population: Patients undergone abdominal surgical procedure accessible population: Patients undergone abdominal surgical procedure in post-operative ward in Guwahati Medical College and Hospital, Guwahati, Assam

Sample: 60 (30 for experimental group+30 for control group)

Sampling technique: Simple random sampling technique

Inclusion criteria:
- Patient who are undergone abdominal surgical procedures in postoperative ward
- Patient who were on second postoperative day.
- Patient who can understand and able to speak Assamese

Exclusion criteria:
- Patients who were mentally challenged
- Patient those who were not able to hear

Description of the tool:
Tool consists of 2 parts

Part 1: Socio demographic Performa:
Socio demographic Performa was used collected the background information of the sample like age, sex, religion, marital status, education, no of previous hospitalization, history of past surgery and music hearing habit.

Part 2: Visual analogue scale
Visual analogue scale was used to assess the level of post-operative pain.
The pain intensity was categorized as severe, moderate and mild. The range of pain score as follows:
Mild:-3 and <3
Moderate:->3 and <7
Severe:-7 and >7

Data collection procedure:
The data were collected three phases

Phase 1: Pre test: The level of post-operative pain were assessed with the help of visual analogue scale before intervention in both experimental and control group

Phase 2: Intervention: In experimental group, selected music was administered through head phone for 5-10 mins for two sessions morning and evening. The music was selected classical Assamese song.

Phase 3: Post test: The level of post-operative pain were reassessed with help of visual analogue scale for experimental and control group.

5. Result\ Discussion

Table 1: Frequency and Percentage Distribution of Patient among Abdominal Surgery Patients, with their Related Demographic Variables in Experimental Group and Control Group

Variables		Experimental Group		Control Group	
		Frequency (F)	Percentage (P)	Frequency (F)	Percentage (P)
Age	15-25 years	8	26.6	4	13.3
	26-35 years	6	20	4	13.3
	36-45 years	5	16.7	11	36.7
	46-55 years	6	20	5	16.7
	56-65 years	2	6.7	3	10
	66-75 years	3	10	3	10
Sex	Male	14	46.7	18	60
	Female	16	53.3	12	40
Religion	Hinduism	21	70	19	63.4
	Muslim	7	23.3	10	33.3
	Christianity	2	6.7	1	3.3
	Any others	0	0	0	0
Marital Status	Married	21	70	16	53.4
	Unmarried	5	16.7	12	40
	Divorce	0	0	1	3.3
	Widow/ widower	4	13.3	1	3.3
Educational Qualification	Illiterate	7	23.3	5	16.7
	Primary school	5	16.7	3	10
	Middle school	11	36.7	12	40
	High school	3	10	5	16.7
	Higher secondary	3	10	2	6.6
	Graduate and above	1	3.3	3	10
No of Previous Hospitalization	0	4	13.3	5	16.7
	1	11	36.7	13	43.3
	2	5	16.7	2	6.7
	3	2	6.7	3	10
	4 and above	8	26.6	7	23.3
History of Past Surgery	Yes	10	33.3	11	36.7
	No	20	66.7	19	63.3
Music Hearing Habit	Yes	18	60	19	63.3
	No	12	40	11	36.7

Table 2: Frequency and percentage distribution of level of post-operative pain abdominal surgery patient in experimental group and control group

Level of post-operative pain	Experimental group				Control group			
	Pre-test		Post test		Pre test		Post test	
	F	%	F	%	F	%	F	%
Mild pain	0	0	12	40	0	0	3	10
Moderate pain	18	60	15	50	16	53.3	17	56.7
Severe pain	12	40	3	10	14	46.7	10	33.3

Table 2 depicts the frequency and percentage distribution of pre-test and post-test level of post-operative pain among abdominal surgery patient in experimental group and control group. Results showed that in experimental group pre-test majority 18 (60%) of participants had moderate pain and 12 (40%) had severe pain whereas in post-test majority 15 (50%) of participants had moderate pain, 12 (40%) had mild pain and 3 (10%) had severe pain.

In control group pre-test majority 16 (53.3%) of participants had moderate pain and 14 (46.7%) had severe pain while in post-test majority 17 (56.7%) of participants had moderate pain, 10 (33.3%) had severe pain and 3 (10%) had mild pain.

The present study findings are similar with the study was conducted by B. S. Sunitha Suresh, Gildasio S., De Oliveira JR and Santhanam Suresh, 2015, to evaluate the effect of audio therapy to treat postoperative pain among undergoing major surgery. Among 56 patients, pain burden was reduced in the music and audiobooks groups compare to control, median (IQR) OF-60 (-90 to 0),-45 (90 to 0) and 0 (-30 to 90) (min × pain score) respectively. P= 0.04. the study concluded that Audio therapy is an efficacious adjunct method to decrease post-surgical pain in children undergoing major surgery.9

N=30

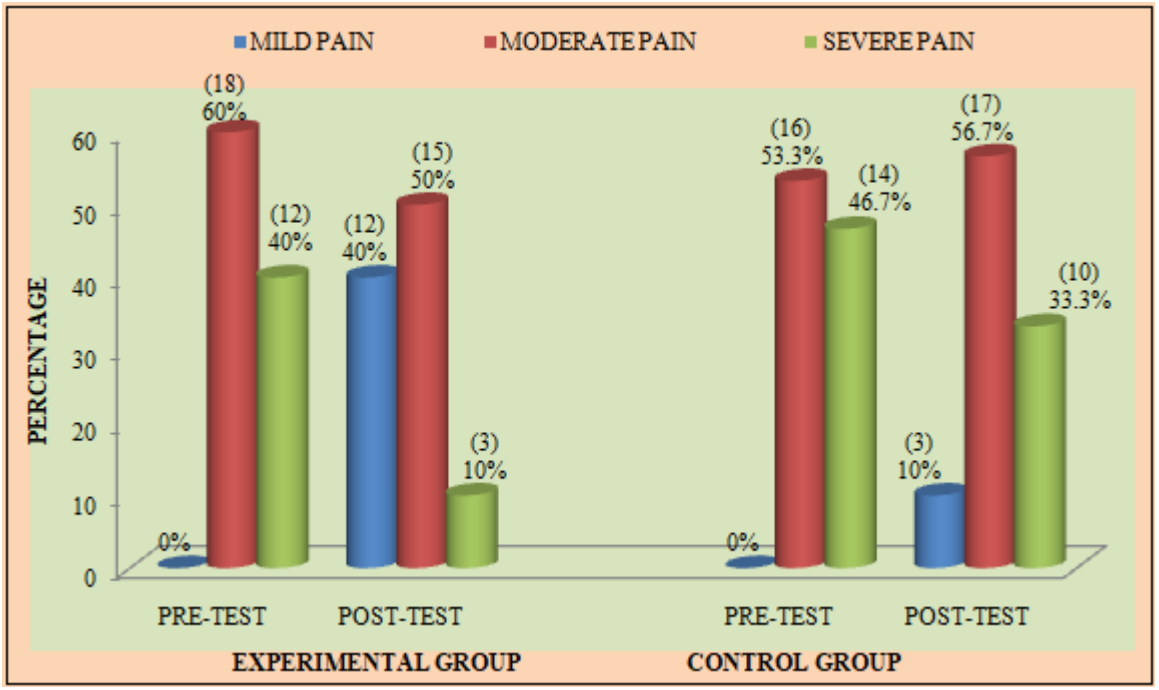

Figure 1: Percentage distribution of pre-test and post-test level of post-operative pain among abdominal surgery patient in experimental group and control group

Table 3: Effectiveness of music therapy on post-operative pain among abdominal surgery patient in experimental group

Experimental group	Mean	SD	Mean difference	t test value	Df	P value
Pre test	6.17	1.020	1.77	8.762	29	0.001**
Post-test	4.40	1.380				

**p<0.01 level of significance

Table 3 depicts the effectiveness of music therapy on post operative pain among abdominal surgery patient in experimental group. Findings showed that mean pre-test pain score was 6.17±1.020 and in post-test mean pin score was 4.40±1.380 with mean difference was 1.77. The effectiveness was tested using paired t test with obtained t value (t=8.762) was significant at p<0.05 level. Result revealed that music therapy was effective on reduction of post operative pain among abdominal surgery patient in experimental group.

The study findings supported by another study conducted by R. Nalini, 2021, to find out the effect of music therapy on pain among post-operative patients at selected hospital. The study revealed that music therapy is an effective intervention in reducing pain score in experimental group as z value was highly significant at p< 0.001 at 3rd, 4th and 5th day and 2nd week of surgery. The study concludes that music therapy is effective in reducing the pain.1[0]

Table 4: Comparison of post-test level of post operative pain among abdominal surgical patient in experimental group and control group

Comparison post test	Mean	SD	Mean difference	t test value	Df	p value
Experimental group	4.40	1.380	1.53	4.455	58	0.001**
Control group	5.93	1.285				

**p<0.01 level of significance

Table 4 indicate that in experimental group mean post-test pain score was 4.40±1.380 and in control group mean post-test pain score was 5.93±1.285 with mean difference was 1.53. The comparison was tested using unpaired t test with obtained t value (t=4.455) was statistically significant at p<0.05 level. Result revealed that music therapy was effective in reducing post operative pain among abdominal surgical patient in experimental group as compared to control group

The study findings support by the study conducted by ErthanGokcek 2018, aimed to evaluate the effect of music therapy on intraoperative awareness, patient satisfaction, awakening and waking quality in patient undergoing elective sept rhinoplasty under general anaesthesia. The mean VAS score for pain was lower in the music therapy, showing statistical significant (2.27 ± 1.28 vs 3.61± 1.40) (p<0.001). The study concluded that music therapy, which is a non-pharmacological intervention, is an effective method, without side effect. It is a effective in reducing the anxiety and intraoperative awareness episodes of surgical patient.

6. Conclusion

Post-operative pain is defined as a condition of tissue injury together muscle spasm after surgery. The investigator had conducted the study to find out the effectiveness of music therapy on post-operative pain management among abdominal surgical patients. After administration of music therapy, findings showed that mean pre-test pain score was 6.17±1.020 and in post-test mean pain score was 4.40±1.380 with mean difference was 1.77. The effectiveness was tested using paired t test with obtained t value (t=8.762) was significant at p<0.05 level. The post test score for pain assessment was significantly lower than the pre-test pain score. Result revealed that music therapy was effective on reduction of post-operative pain among abdominal surgery patient in experimental group. Regarding comparison of

post-test level of post-operative pain among abdominal surgical patients in experimental group and control group, findings showed that in experimental group mean post-test pain score was 4.40±1.380 and in control group mean post-test pain score was 5.93±1.285 with mean difference was 1.53. The comparison was tested using unpaired t test with obtained t value (t=4.455) was statistically significant at $p<0.05$ level. Result revealed that music therapy was effective in reducing post-operative pain among abdominal surgical patient in experimental group as compared to control group. Music therapy has no complication, less cost effective and easy to administer to patients. The investigator found that music therapy can be used as non-pharmacological intervention to reduce post-operative pain management. The study can be concluded that Music therapy found to be effective for post-operative pain management among patients.

Future scope:

Based on the study findings, the following recommendation were made for the future study

- A similar study can be done on large sample.
- A similar study could be done on other post-operative conditions.

The study is limited to the

- Post-operative patients who have undergone major abdominal surgery
- Data collection period is 4 weeks only
- Sample size is 60
- 2nd and 3rd post-operative days

References

[1] Good M, 1995, A comparison of the effects of jaw relaxation and music on postoperative pain. Nursing research; January, Volume 44 (1): 52-57. Retrieve from https: //psycnet. apa. org/record/1995-30451-001

[2] M Mojtaba, P Amir, A Shala, N E Mousavi, 2017, The Comparison of the Effect of Two Complementary Medicine Methods (Music Therapy and Massage Therapy) On Postoperative Acute Pain After Abdominal Surgery: A Randomized Clinical Trial Study. Iran Red Crescent Med. June 19 (6): e14974. PIMD: 317658597. Retrieved fromhttps: //www.researchgate. net/publication/317658597

[3] Kneafseay R, 1997. The therapeutic effect of music in a case of elderly setting: a literature review. Journal of clinical nursing; 6 (5): 341-6. PMID: 9355467. Retrieved fromhttps: //pubmed. ncbi. nlm. nih. gov/9355467

[4] M Estele, G R Dennis, M Chiratidzo, 2019, knowledge On Non Pharmacological Of Pain Management Among Nurses at Bindura Hospital, Zembabwe, Pain Research and treatment Pain Research and Treatment, 2703579. Article ID 2703579. Retrieved from https: //doi. org/10.1155/2019/2703579

[5] Dai WS, Huang ST, Xu N, Chen Q, Cao H, 2020. The effect of music therapy on pain, anxiety and depression in patients after coronary artery bypass grafting. J Cardiothorac Surg. May 11; 15 (1): 81. PMID 32393300. Retrieved fromhttps: //pubmed. ncbi. nlm. nih. gov/32393300

[6] Gokcek E, Kaydu A, 2020. The effects of music therapy in patients undergoing septorhinoplasty surgery under general anesthesia. Braz J Otorhinolaryngol. Jul-Aug; 86 (4): 419-426. PMID: 31523022. Retrieved fromhttps: //pubmed. ncbi. nlm. nih. gov/31523022

[7] Schneider MA, 2018. The Effect of Listening to Music on Postoperative Pain in Adult Orthopedic Patients. J Holist Nurs. Mar; 36 (1): 23-32. PMID: 29436975. Retrieved from https: //pubmed. ncbi. nlm. nih. gov/29436975

[8] Kahloul M, Mhamdi S, Nakhli MS, Sfeyhi AN, Azzaza M, Chaouch A, Naija W, 2017. Effects of music therapy under general anesthesia in patients undergoing abdominal surgery. Libyan J Med.2017 Dec; 12 (1): 1260886. PMID: 28452603 Retrieved from https: //pubmed. ncbi. nlm. nih. gov/28452603

[9] Sunitha Suresh, B. S., De Oliveira, G. S. & Suresh, S2015. The effect of audio therapy to treat postoperative pain in children undergoing major surgery: a randomized controlled trial. PediatrSurg Int 31, 197–201. https: //doi. org/10.1007/s00383-014-3649-9

[10] R. Nalini, 2021. Effect of music therapy on pain among post operative patients at selected hospital. International journal of advances in nursing management. Jul 9 (4) 309-314. PMID 1138913545. Retrieved fromhttps: //ijanm. com/AbstractView. aspx?PID=2021-9-3-17

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