International Journal of Applied Ayurved Research ISSN: 2347- 6362

ROLE OF MUSIC THERAPY IN ANESTHESIA

[1]Pareek Ashish [2]Singh Narinder [3]Verma Kalpana
[1]Assistant Prof. Dept. of shalya tantra, S.S.S.B. Ayurveda College & hospital, Renwal, Jaipur
[2]Assistant Prof. P.G. Dept. of Shalya Tantra, NIA Jaipur
[3]Assistant Prof. Dept. of shalya tantra, M.J.F. Ayurveda College & hospital, Chomu, Jaipur

ABSTRACT :

Patients referred for surgery experience varying degrees of perioperative anxiety and fear. Anxiety is accompanying with increases in heart rate and blood pressure and other alterations that can have a undesirable impact preoperatively; during the induction, maintenance, and emergence periods of anesthesia; and postoperatively. The anesthesiologist efforts to decrease the extent of the problem by administering tranquilizers, of which benzodiazepines are the most effective. But those drugs have adverse properties, such as excitement, hyperactivity, and prolonged amnesia. Music therapy is a non-pharmacological intervention that has the ability to decrease anxiety levels in some patients. There are ample indications that relaxing music is effective in regulation of nervousness and activation of the autonomous nervous system triggered by preoperative anxiety. Based on this, the implantation of preoperative music therapy by anesthesiologists is advisable.

Key words: Music therapy, Anesthesia, Anxiety.

INTRODUCTION: Patients undergoing surgery are subject to multiple environmental and psychosocial factors that contribute to anxiety. This can contribute for changes in cardiovascular parameters, like pulse rate and blood pressure etc. as well as potentiates the severity of postoperative pain. The anesthesiologist tries to reduce the magnitude of the problem by administering tranquilizers, of which benzodiazepines are the most effective. But those drugs have side effects, such as agitation, hyperactivity, and prolonged amnesia [1]. Amnesia imposes an additional problem, especially in outpatients, who might not recall the instructions given before being discharged from the hospital [2]. Thus, other modalities to control perioperative anxiety and fear are certainly welcome. Music therapy is a non-pharmacological intervention that has the ability to reduce anxiety levels in some patients. This review presents research studies that have been conducted on the effects of music therapy for patients in different clinical settings. Offering a music selection to patients before anesthesia could enhance its positive effect.

Music has been suspected of having therapeutic properties for thousands of years. Reports of music therapy can be found in historic writings from many ancient civilizations including Egypt, China, India, Greece and Rome. The first modern use of music therapy in the clinical setting dates back to World Wars I and II, when music was used to relieve pain and agitation in soldiers with traumatic war injuries.[3]

In the last 30 years, the number of prospective, randomized studies evaluating the clinical benefits of music therapy has significantly increased. This proliferation of high quality scientific research in the field of clinical music therapy has generated significant level evidence, suggesting

that music therapy is capable of providing significant benefits as an adjuvant therapeutic tool in a wide variety of clinical settings[4,5]. Furthermore, in the last decade, several meta-analyses and systematic reviews addressing the role of music therapy in specific clinical specialties have been performed.[4,5] This growing body of evidence provides robust scientific support for the hypothesis that music can positively influence several subjective and physiological variables related to anxiety and pain, significantly decrease pharmacological analgesia and sedative requirements, and make a meaningful improvement in mood and quality of life measures for a variety of patients.[4,5,6] In order to evaluate the current status of medical evidence regarding the beneficial effects of music therapy in clinical practice, the authors performed a thorough literature review of the current body of scientific evidence regarding the use of music therapy as an adjuvant treatment in anesthesia.

MATERIALS AND METHODS: In order to determine the current body of scientific evidence supporting the therapeutic effects of music therapy in modern clinical practice, the authors performed a thorough literature search focused on the identification of the available peer-reviewed literature that provided scientific evidence for the benefits of music therapy in human subjects. The authors used the following inclusion criteria for the search: medical literature available in the English language, dating from 1990 until 2012, and listed on the PubMed/Medline database in the form of randomized and non-randomized controlled clinical trials, meta-analyses and systematic reviews. A multi-word, multi-search approach was used employing a combination of the following terms: music therapy, anxiety, pain, symptoms, patient, anxiolytic, analgesic, anesthesia, vitals, heart rate, pulse, blood pressure, meta-analysis, and systematic review on music therapy.

A review of literature was conducted with keywords: anxiety, stress, surgery, music/musical, and preoperative, entered into medline, cinahl, google Scholar, Science Direct, and Academic Search Complete databases. Research documents pertaining to adult populations with ages ranging from 16 to 85 were included. A variety of surgical procedures were evaluated including ambulatory surgery, or those with only one night of expected hospitalization. Surgeries included in the literature were facilitated under general, regional anesthesia. A focus on music as an intervention in the preoperative phase of the surgical theatre was stressed.

DISCUSSION: There have also been several studies in anesthesiology that have investigated the ability of music to reduce patients' anxiety and pain, both during general and spinal anesthesia as well as during conscious sedation.[7,8,9]

Lepage et al.[10] observed that music therapy decreases the consumption of sedative drugs during spinal anesthesia. Leardi et al. [11] observed a reduction of the stress response to intraoperative relaxing music in outpatients. Berbel et al.[12] compared preoperative music with diazepam and they concluded that music is as effective as benzodiazepines in the control of anxiety. Studies on the postoperative period have shown that patients exposed to music require less rescue analgesics and they can be mobilized earlier after the surgery when compared to the control group [13].

Midazolam is the benzodiazepine used more often in standard pre-medication, especially in outpatients. Recently,

Bringman et al.[14] compared the effects of pre-medication with oral midazolam with those of relaxing music on the prevention of preoperative anxiety, and they concluded that music causes a greater reduction in the level of preoperative anxiety than midazolam. In those studies, patients listen to music through earphones connected to a CD-player. When evaluating the degree of anxiety, the STAI scale (State Trait Anxiety Inventory), which encompasses 20 questions on how the individual feels at the moment of the investigation, has been used [15].

PROBABLE MODE OF ACTION: Possible mechanisms of action include activation of the limbic or other areas of the brain related to the reward and motivation circuitry (limbic-cortical circuits) which may initiate secondary physiological changes and bodily reactions including regulation of autonomic processes (such as breathing and heart rate). The analgesic and relaxation responses are considered to be associated with the lowering of stress levels and stress hormone production similar to the relaxation response[16]. Other researchers have suggested that music therapy can alleviate pain via the gate control theory and that it may act as a mental distraction[17].

It has been proposed that advances in neuroscience and functional neuro-imaging studies are providing new insights into the mechanism of action of music therapy on the brain. Music has been suggested to affect specific neural pathways implicated in the pathophysiology of pain, anxiety and depression[18].

CONCLUSION: Unlike benzodiazepines, therapy with relaxing music is devoid of adverse effects. In the study of Bringman et al. [14], some patients in the midazolam group were not able to finish the STAI scale formulary to evaluate the degree of anxiety because they were sedated. Another side effect of benzodiazepines in the postoperative period is described as "hangover".

There are enough indications that relaxing music is effective in the control of apprehension and activation of the autonomous nervous system caused by perioperative anxiety. Based on this, the implantation of perioperative music therapy by anesthesiologists is advisable.

In summary, although widely unknown by the vast majority of physicians and healthcare providers, the field of scientific clinical music therapy research has significantly progressed in recent decades so that at the present moment there is a robust body of level evidence supporting the benefits of music therapy when used as an adjuvant treatment in clinical practice. Therefore, the authors of this review advocate not only for further support from the scientific and medical communities for advancing research in this field but also for the urgent attention of public authorities and healthcare providers so that implementation of widespread music therapy programs may translate the successful results of scientific research presented in this review in terms of improvement of patients' care, especially in public healthcare systems.

REFERENCES:

1. Weinbroum AA, Szold O, Ogorek D et al. - The midazolam: induced paradox phenomenon is reversible by flumazenil. Epidemiology, patient characteristics and review of the literature. Eur J Anesthesiol, 2001;18:789-797.

2. De Witte JL, Alegret C, Sessler DI et al. - Preoperative alprazolam reduces anxiety in ambulatory surgery patients: a compari-

son with oral midazolam. Anesth Analg, 2002;95:1601-1606.
3. Misic P, Arandjelovic D, Stanojkovic S, Vladejic S, Mladenovic J. Music Therapy. Eur Psychiatry 2010 Jan;839
4. Bradt J, Dileo C, Grocke D, Magill L. Music interventions for improving psychological and physical outcomes in cancer patients. Cochrane Database Syst Rev 2011 Aug(8):CD006911.
5. Bradt J, Dileo C. Music for stress and anxiety reduction in coronary heart disease patients. Cochrane Database Syst Rev 2009 Apr(2):CD006577
6. Evans D . The effectiveness of music as an intervention for hospital patients: a systematic review. J Adv Nurs 2002 Jan;37(1):8-18.
7. Kliempt P, Ruta D, Ogston S, Landeck A, Martay K. Hemispheric-synchronisation during anesthesia: a double-blind randomised trial using audiotapes for intraoperative nociception control. Anaesthesia 1999 Aug;54(8):769-73.
8. Lepage C, Drolet P, Girard M, Grenier Y, DeGagné R. Music decreases sedative requirements during spinal anesthesia. Anesth Analg 2001 Oct;93(4):912-6.
9. Maeyama A, Kodaka M, Miyao H. Effect of the music-therapy under spinal anesthesia. Masui 2009 Jun;58(6):684-91.
10. Lepage C, Drolet P, Girard M et al. - Music decreases sedative requirements during spinal anesthesia. Anesth Analg, 2001;93:912-916.
11. Leardi S, Pietroletti R, Angeloni G et al. - Randomised clinical trial examining the effect of music therapy in stress response to day surgery. Br J Surg, 2007;94:943-947.
12. Berbel P, Moix J, Quintana S - Estudio comparativo de la eficacia de la musica frente al diazepam para disminuir la ansiedad prequirurgica: un ensayo clinico controlado y aleatorizado. Rev Esp Anestesiol Reanim, 2007;54:355-358.
13. Nilsson U, Rawal N, Unestahl LE et al. - Improved recovery after music and therapeutic suggestions during general anaesthesia: a double-blind randomized controlled trial. Acta Anaesthesiol Scand, 2001;45:812-817.
14. Bringman H, Giesecke K, Thorne A et al. - Relaxing music as premedication before surgery: a randomized controlled trial. Acta Anesthesiol Scand, 2009;53:759-764.
15. Burns JL, Labbe E, Arke B et al. - The effects of different types of music on perceived and physiological measures of stress. J Music Ther, 2002;39:101-116.
16. Ernst E, Pittler MH, Wider B and Boddy K. Oxford Handbook of Complementary Medicine. Oxford University Press (2008) ISBN 978-0-19-920677-3.
17. Li XM, Yan H, Zhou KN, Dang SN, Wang DL, Zhang YP. Effects of music therapy on pain among female breast cancer patients after radical mastectomy: results from a randomized controlled trial. Breast Cancer Research and Treatment 2011; 128(2):411-419
18. Archie P, Bruera E, Cohen L. Music-based interventions in palliative cancer care: a review of quantitative studies and neurobiological literature. Support Care Cancer 2013; 21: 2609-24

Corresponding Author:
Dr. Ashish pareek,Assistant Prof. Dept. of shalya tantra, S.S.S.B. Ayurveda College & hospital, Renwal, Jaipur
Email- drashishpareek7@gmail.com

Source of support: Nil
Conflict of interest: None Declared