



Reducing Anxiety through Music Therapy for Regional Anesthesia Cases in Operating Theatre

****Mohd Rahmat Bin Abdul HAMID, Marzida Binti MANSOR, Mohd Fitry Bin Zainal ABIDIN***

Department of Anesthesiology, University of Malaya Medical Centre, Malaya, Malaysia

***Corresponding Author:** Email: mrahmat@ummc.edu.my

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Dear Editor-in-Chief

The increase in anxiety level is a serious issue in regional anesthesia cases. This is due to the patient's awareness of the operation, thus making them to hear sounds from the operating equipment, drilling as well as conversations between surgeons.

This research was conducted at Operation Theater (Orthopedic), University Malaya Medical Centre (UMMC), Kuala Lumpur, Malaysia in year 2018. The main aim of this research was to assess the effect of music therapy in reducing anxiety for regional anesthesia cases at the Operating Theatre based on the distribution of hemodynamic (blood pressure) variables. This study was based on a null research hypothesis, with the following specific hypothesis: (i) There is no positive relationship between music therapies in reducing anxiety for regional anesthesia at the operating room and (ii) There is a positive relationship between the effects of music therapy in reducing anxiety with the distribution of hemodynamic (blood pressure) variables.

A quantitative approach conducted via an experimental sampling technique was employed in this research. The sample size was estimated using the G-power 3.010 software. By considering the

power=0.8, $\alpha=0.05$, effect size=0.3, and the two tailed test, the calculated sample size of 90 patients were recruited. The sample was randomized via the randomizer.org software. The data was analyzed using the SPSS (Chicago, IL, USA).Version 21.0. Trial Registry Number: 201794-5541 (MREC-UMMC).

Results from the research indicated ($P<0.001$) a significance for the hemodynamic (blood pressure) variables related to the use of music therapy in reducing anxiety for regional anesthesia cases at the operating theatre.

Table 1 indicates that there was a significant difference in the mean of diastolic blood pressure within no music and music group based on time ($P<0.001$). From the post hoc test, both music and no music group showed significant difference in the mean of diastolic blood pressure based on time.

Result from Table 2 indicates that there is a significant difference in the mean of diastolic blood pressure within the no music and music group based on time ($P<0.001$). From the post hoc test, both music and no music group showed significant differences in the mean of diastolic blood pressure based on time (1).

Table 1: The result of repeated measure (diastolic blood pressure for with music)-post hoc test

| <i>Comparison (min)</i> | <i>Music</i> | | <i>Comparison (min)</i> | <i>No Music</i> | |
|-----------------------------|------------------------------------|----------------|-----------------------------|------------------------------------|----------------|
| | <i>Mean Difference (95%CI)</i> | <i>P-value</i> | | <i>Mean Difference (95%CI)</i> | <i>P-value</i> |
| 5 vs. 10 | 2.73(1.51,3.96) | <0.001 | 25 vs. 10 | 1.42(0.18,2.66) | 0.014 |
| 5 vs. 15 | 4.36(2.93,5.79) | <0.001 | 25 vs. 15 | 1.31(0.37,2.26) | 0.001 |
| 5 vs. 20 | 6.00(4.39,7.61) | <0.001 | 25 vs. 20 | 0.71(0.15,1.28) | 0.005 |
| 5 vs. 25 | 7.00(5.21,8.79) | <0.001 | 30 vs. 10 | 1.93(0.68,3.18) | <0.001 |
| 5 vs. 30 | 8.49(6.50,10.48) | <0.001 | 30 vs. 15 | 1.82(0.68,2.97) | <0.001 |
| 10 vs. 15 | 1.62(0.56,2.69) | <0.001 | 30 vs. 20 | 1.22(0.37,2.08) | 0.001 |
| 10 vs. 20 | 3.27(1.77,4.76) | <0.001 | | | |
| 10 vs. 25 | 4.27(2.75,5.78) | <0.001 | | | |
| 10 vs. 30 | 5.76(3.96,7.56) | <0.001 | | | |
| 15 vs. 20 | 1.64(0.49,2.80) | 0.001 | | | |
| 15 vs. 25 | 2.64(1.42,3.87) | <0.001 | | | |
| 15 vs. 30 | 4.13(2.81,5.46) | <0.001 | | | |
| 20 vs. 30 | 2.49(1.18,3.80) | <0.001 | | | |
| 25 vs. 30 | 1.49(0.50,2.47) | <0.001 | | | |

Table 2: The result of repeated measure (diastolic blood pressure for off music) -) post hoc test

| <i>Comparison (minutes)</i> | <i>Music</i> | | <i>Comparison (minutes)</i> | <i>No Music</i> | |
|---------------------------------|------------------------------------|----------------|---------------------------------|------------------------------------|----------------|
| | <i>Mean Difference (95%CI)</i> | <i>P-value</i> | | <i>Mean Difference (95%CI)</i> | <i>P-value</i> |
| 15 vs. 5 | 2.36(0.90,3.81) | <0.001 | 15 vs. 5 | 1.73(0.80,2.67) | <0.001 |
| 15 vs. 10 | 1.89(0.40,3.38) | 0.005 | 25 vs. 5 | 2.82(1.60,4.04) | <0.001 |
| 20 vs. 5 | 4.00(2.38,5.62) | <0.001 | 25 vs. 10 | 1.82(0.62,3.02) | <0.001 |
| 20 vs. 10 | 3.53(1.99,5.07) | <0.001 | 25 vs. 15 | 1.09(0.10,2.08) | 0.020 |
| 20 vs. 15 | 1.64(0.38,2.91) | 0.003 | 30 vs. 5 | 2.84(1.51,4.18) | <0.001 |
| 25 vs. 5 | 5.38(3.58,7.18) | <0.001 | 30 vs. 10 | 1.84(0.59,3.10) | 0.001 |
| 25 vs. 10 | 4.91(3.39,6.44) | <0.001 | | | |
| 25 vs. 15 | 3.02(1.67,4.38) | <0.001 | | | |
| 25 vs. 20 | 1.38(0.24,2.52) | 0.008 | | | |
| 30 vs. 5 | 6.91(4.90,8.93) | <0.001 | | | |
| 30 vs. 10 | 6.44(4.72,8.17) | <0.001 | | | |

There is a need for music therapy in operation theatres as an alternative to non-pharmacological treatment in reducing anxiety (2). The significant result indicated the need for music therapy in reducing anxiety for patients during surgery. It is suggested that opportunity can be open for collaboration with medical devices vendors to ensure an improvisation to the existing machine by

adding the module of music inside the monitoring system with complete headphone set (3, 4). Reinforcement to anesthetists regarding the use of music therapy need to be done in order to increase their awareness to select non-pharmacology intervention at the first place before directly giving the pharmacology intervention (medication) to them (5).

Conflict of interest

The authors declare that there is no conflict of interest.

References

1. Gooding L, Swezey S, Zwischenberger JB (2012). Using music interventions in perioperative care. *South Med J*, 105:486-490.
2. Bernatzky G, Presch M, Anderson M, Panksepp J (2011). Emotional foundations of music as a non-pharmacological pain management tool in modern medicine. *Neurosci Biobehav Rev*, 35:1989-1999.
3. Hauck M, Metzner S, Rohlffs F, et al (2013). The influence of music and music therapy on pain-induced neuronal oscillations measured by magnetencephalography. *Pain*, 154:539-547.
4. Jiménez-Jiménez M, García-Escalona A, Martín-López A, et al (2013). Intraoperative stress and anxiety reduction with music therapy: A controlled randomized clinical trial of efficacy and safety. *J Vasc Nurs*, 31:101-106.
5. Wang Y, Dong Y, Li Y (2014). Perioperative psychological and music interventions in elderly patients undergoing spinal anesthesia: effect on anxiety, heart rate variability, and postoperative pain. *Yonsei Med J*, 55:1101-1105.