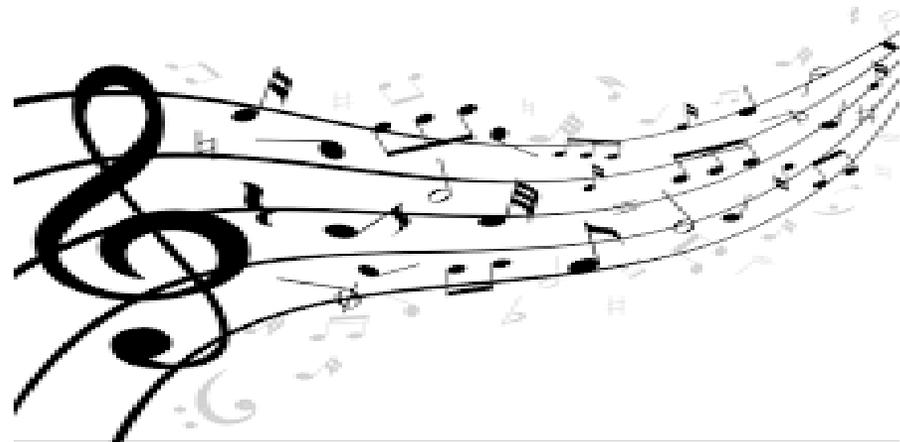


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Music therapy in ICU

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Delirium prevention care bundle

Targets Intensive Therapy Unit environmental issues!

5 components

- Noise levels/ LIGHT LEVELS (including sleep/wake cycles) (1C)
- Music therapy (MT) (Cochrane review)
- Reorientation therapy
- Screen for delirium (1B)
- Early mobilisation (2C)



The Music Playlist

- Bach- Goldberg variations
- Debussy- premiere arabesque
- Jean Sibelius- “Valse Triste” orchestra
- Vivaldi- “winter” largo and the four seasons 2
- Bach- orchestra 1 and orchestral suite no 3
- Piano- Chopin nocturnes 1,2,8,10,14,19,21 (several parts of this are really good)
- Liszt – Liebesträume 1,2+3



questions

- Individualised music- headphones- disposable single patient use
- Device to play music from- lost/ stolen/ broken/ discarded 23- now 5 2012-2018
- Generalised music played into the room
- Patient preferences- music as enjoyment vs therapy
- 30-50db sound level



Results: State Anxiety (STAI, VAS)

- Low-quality evidence suggested that the mean state anxiety in the intervention groups was 1.11 standard deviations lower (1.75 to 0.47 lower; 5 trials, 288 participants).
- A standardized mean difference of 1.11 is considered to represent a large, clinically significant effect according to interpretation guidelines put forth by Cohen (Cohen 1988). Cohen suggested that an effect size of 0.2 should be considered a small effect, an effect size of 0.5 medium, and an effect size of 0.8 large.



Results: Physiological measures

- Very low-quality evidence suggested improvements in a range of haemodynamic responses:
 - Heart rate (mean difference -3.95 beats per minute, 95% -6.62 to -1.27; 8 trials, 338 participants)
 - Respiratory rate (mean difference -2.87 beats per minute, 95% -3.64 to -2.10; 9 trials, 357 participants)
 - Systolic blood pressure (mean difference -4.22 mmHg, 95% -6.30 to -2.06; 6 trials, 269 participants)
 - Diastolic blood pressure (mean difference -2.16 mmHg, 95% -4.40 to 0.07; 6 trials, 269 participants; difference between groups not statistically significant)



Results: Sedation/Analgesic use

- One RCT with 176 participants analysed for this outcome reported that an average usual care group participant received five doses of any one of the eight commonly administered sedative and analgesic medications whereas an equivalent music group participant received just three doses. There were also statistically significant differences in the sedation intensity score ($P = 0.05$) and in the sedation frequency score ($P = 0.01$) between groups.
- A second RCT with 49 participants analyzed for this outcome reported that patients listening to music used less daily fentanyl (mean 1597 μg pre- and 1343 μg post-music vs. 1593 μg pre- and 1715 μg post-standard care), although the difference between the two groups was not statistically significant ($P = 0.06$). There was no statistically significant difference between the groups for the intake of propofol or benzodiazepines.
- A third RCT with 10 participants analysed for this outcome reported that “patients in the music group did not require additional sedation by propofol, whereas among patients in the control group, propofol was occasionally necessary to allow sufficient patient-ventilator coordination”.



Conclusions

- Music listening seems to have a beneficial effect on state anxiety in mechanically ventilated patients in critical care units but the evidence is low quality.
- Music listening may reduce respiratory rate and systolic blood pressure, suggesting a relaxation response but the evidence is very-low quality.
- A limitation of the data is that key outcomes such as quality of life, patient satisfaction, and adverse effects were not assessed.
- Since music listening is an easy intervention to implement, the review authors recommend that music listening be offered as a stress management intervention to these critically ill patients.

How we developed play list

- “BRI music therapy playlist”
- 100+ classical pieces of music compared- these are chosen “best selection”
- Need for RCA on music selection using BIS/RASS ideally... EEG recording....???
- Leeds sleep evaluation questionnaire (LSEQ)

Giovanni Mistraletti, University of Milan- single centre 153 participants

3 patient groups- control- standard treatment, individualised music therapist- with known liked music and soothing music and generalised music played into the room.

- Music will be broadcasted in each patient room after the creation of a 'weekly playlist' with the following considerations:
- 1. Daily sound reproduction from 7 am to 11 pm, with 10 minutes break about every 50 minutes of music;
- 2. Spread through the environment with specifically designated speakers, at a controlled volume (30-50 dB);
- 3. Choice of playlist of music both classic and modern, with very easy listening, selected according to the daily hours to restore circadian rhythm and following predictable activities of care provided to patients (hygienic care, retail food, administration other therapies, physiotherapy, visit by relatives, ...);
- 4. Mixing tracks so that there is continuity and fluidity of listening

Interesting ideas...

Primary outcome measure

1. Neuroactive drug free days [Time Frame: one year]

- the outcome will be calculated giving one point for each day during the measurement period that patients are both alive and free the administration of any neuroactive drug

Secondary Outcome Measures [?]:

1. Sedative exposure [Time Frame: one year]

Sedative exposure will be determined for all patients who will receive any of 8 commonly administered sedative and analgesic medications in the ICU (midazolam, lorazepam, propofol, dexmedetomidine, morphine, fentanyl, hydromorphone, haloperidol) 24 hours prior to enrollment and each day during the study. Sedative exposure will be operationalized as a daily sedative drug intensity score and sedative dose frequency

2. Reduction of the stress associated to ICU stay [Time Frame: one year]

- The stress during the ICU stay will be measured by the validated ICUESS scale

Khan et al 2018

Screening ICU Patients on Mechanical Ventilation

Allocation n = 60

Personalized Music n = 20

Attention-Control n = 20

Non-Personalized Music n = 20

Blinded Initial Assessments (Music preferences, IQCODE, Katz, Lawton, RASS, CAM-ICU, CPOT, clinical and laboratory data)

Enrollment

Blinded Assessments Until Hospital Discharge or 28 days (RASS, CAM-ICU, CPOT, VASA, safety monitoring)

Twice Daily

Blinded Assessments (Richard-Campbell Questionnaire, RASS, CAM-ICU)

Discharge

Music Intervention Two 60-min sessions up to 7 days

Critical Care Recovery Center Follow Up at 90 Days

Fig. 1 DDM study flowchart, interventions, and assessments. Abbreviations: CAM-ICU Confusion Assessment Method for the Intensive Care Unit, CPOT Critical Pain Observation Tool, Katz Katz Index of Independence in Activities of Daily Living, Lawton Lawton Instrumental Activities of Daily Living, RASS Richmond Agitation-Sedation Scale, VASA Visual Analog Scale for Anxiety

references

- Decreasing Delirium through Music (DDM) in critically ill, mechanically ventilated patients in the intensive care unit: study protocol for a pilot randomized controlled trial Sikandar H. Khan, Sophia Wang, Amanda Harrawood, Stephanie Martinez, Annie Heiderscheit, Linda Chlan, Anthony J. Perkins, Wanzhu Tu, Malaz Boustani and Babar Khan (2018) **Trials** (2017) 18:574