MUSIC THERAPY INTERVENTION IN REDUCING DELIRIUM IN CRITICALLY ILL PATIENTS

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INTRODUCTION

✓Critically ill patients in ICU may develop delirium which is a complex neuropsychiatric syndrome represented by an acutely altered mental status, alongwith disturbed attention and cognition and arousal.

✓ ICU psychosis or delirium is often associated with increased length of stay in the ICU and long term cognitive impairment.

✓Delirium develops mostly in vulnerable patients (eg..elderly and cognitively impaired) in the throes of critical illness.

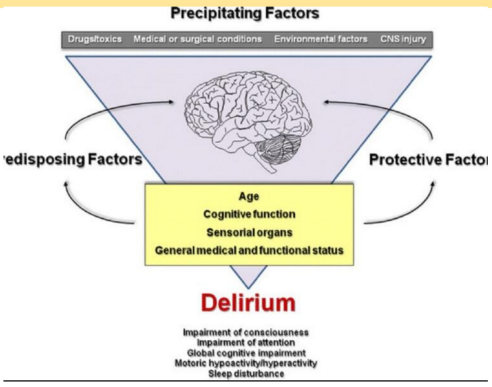
✓Main mechanisms that contribute to delirium are neuro-transmitter imbalance, inflammation and physiological stressors.

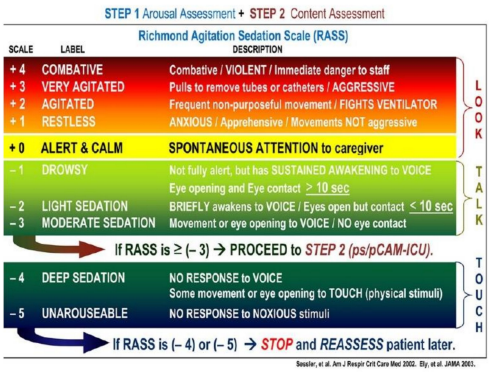
❖The management of delirium can be improved with frequent monitoring, as early detection and subsequent treatment of the underlying condition can improve outcome.

❖ Recent evidence based studies have shown that pharmacological interventions do not treat delirium or reduce its severity.

❖Non-pharmacological strategies with early mobilization, reducing causes for sleep deprivation, and reorientation measures may be effective in the prevention of delirium.

❖Music therapy is a unique, non-pharmacological intervention that may decrease the incidence and severity of delirium. This is hypothesized secondary to enhancement of brain alpha waves after listening to slow- tempo music.





AIMS & OBJECTIVES

❑To reduce incidence and severity of delirium in patients admitted at ICU by music therapy.

DAILY ASSESSMENTS -

CAM (CONFUSION ASSESSMENT METHOD)-ICU (INTENSIVE CARE UNIT) to screen for delirium

CAM (CONFUSION ASSESSMENT METHOD)-ICU(INTENSIVE CARE UNIT) 7 to determine delirium severity

OUTCOME MEASURES-

Delirium Incidence { Time frame- Date of enrollment till date of shift out or discharge from ICU}

Reduction in severity of delirium {Time frame- Date of enrollment till date of shift out or discharge from ICU}

DESIGN

✓It was an observational prospective study conducted on the English or Hindi or Bengali speaking patients (between 20-85 years of age) admitted at the medical or surgical ICU (Intensive Care Unit) of Medica Superspecialty Hospital, Mukundapur, Kolkata.

✓The study was conducted in the year of 2023 (July to December).

✓Patients are excluded from our study if any of the following conditions are present:

✓ 1) severe dementia or chronic neurological disease 2) severe psychiatric illness (not including depression) 3) uncorrected or severe hearing impairment 4) suspected or confirmed drug or alcohol intoxication or withdrawal 5) attending physician or healthcare team refusal 6) expected death within 24 hours.

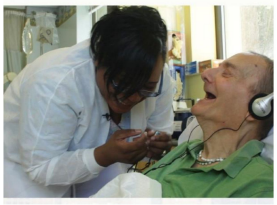
METHODOLOGY

❑After obtaining informed consent, participants were screened on a daily basis. Music preference data was collected from all participants or their relatives (as per the condition of the patient).

❑ A pre- intervention level of delirium assessment was performed upon enrollment through CAM-ICU.

❑ Participants were provided with noise cancelling headphones along with a mobile phone for the period of time for about 45 minutes twice a day when music therapy would be administered to the patient.

❑The music therapy was provided for consecutive 7 days post enrollment. Participants stopped receiving music sessions early if they chose to withdraw, were transferred out of the ICU, died or were discharged.



❑Patients' anxiety was assessed once daily using a self-report visual analog scale (VAS) score (0, no distress; 4, very severe distress).

❑Patients' pain was assessed twice daily (after each intervention) using the Critical Care Pain Observation Tool.

❑To measure adherence, the duration of each music session, including start and stop times and reasons for interruption if any were recorded.

❑Vital signs (heart rate, blood pressure, respiratory rate) were also recorded before and after each session. Patients' mobility milestones were also noted down from inpatient therapy notes.

❑The incidence and severity of delirium during the intervention period were considered in accordance with the median daily worst CAM-ICU score and CAM-ICU-7 score respectively for each patient.

❑The level of consciousness was noted as the median of the mean daily scores on the Richmond Agitation Sedation Scale for each patient during the intervention period.

❑Delirium/coma-free days provide an estimate of the duration of normal brain function (free from coma and delirium), and hence they function as a surrogate of delirium duration not confounded by coma or death.

❑ For patients discharged from the hospital before day 7, the remaining days until day 7 were counted as delirium/coma-free. For patients who died or withdrew before day 7, their subsequent delirium/coma-free days were noted as 0; this managed the conflicting effects of the intervention on delirium and survival.

FINDINGS

➢From July 2023 to December 2023, 1589 patients were screened. Of the 117 eligible patients (7.4%), 56 (48%) consented to participate, and 52 (44%) were randomized.

➢Adherence was high in the groups listening to music (80%) and around 80 % of the patients surveyed rated the music as enjoyable.

➢The median number of delirium/coma free days by day 7 was 3 and median delirium severity was 3.5.

CONCLUSION

❖Earlier studies have demonstrated a calming effect with music therapy.

❖Listening to music has been shown to activate the areas of the brain involved with memory, cognitive function, and emotion.

❖By reducing brain dysfunction and increasing the activity in the areas related to memory, music could help retain cognitive function.

❖Music Therapy was observed to be acceptable to severely ill patients and feasibly delivered in the ICU.

❖However, further research is needed in order to test the efficacy of music and determine its mechanisms of action in managing delirium through the use of non-pharmacological means.