MuSICCA: The Music therapy Sensory Instrument for Cognition, Consciousness and Awareness

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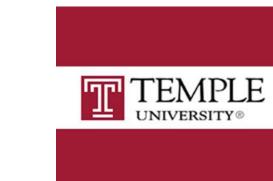






Children's Trust













Children and young people surviving severe ABI can experience Disorders of Consciousness (DoC).

Abstract

Diagnostic, clinical, and ethical challenges are prominent with this group.

Misdiagnosis of children risks inadequate care, rehabilitation and stimulation, reduced access to services, and inappropriately limited opportunities for participation.

Understanding a child's sensory responsiveness is fundamental to the quality, mode and intensity of the sensory stimulation and care³.

The Music therapy Sensory Instrument for Cognition, Consciousness and Awareness (MuSICCA) has been developed from the MATADOC, an existing standardized measure of awareness for adults^{1,2}.

Families, multidisciplinary teams and international experts in music therapy and paediatric DoC were consulted to refine the existing adult measure.

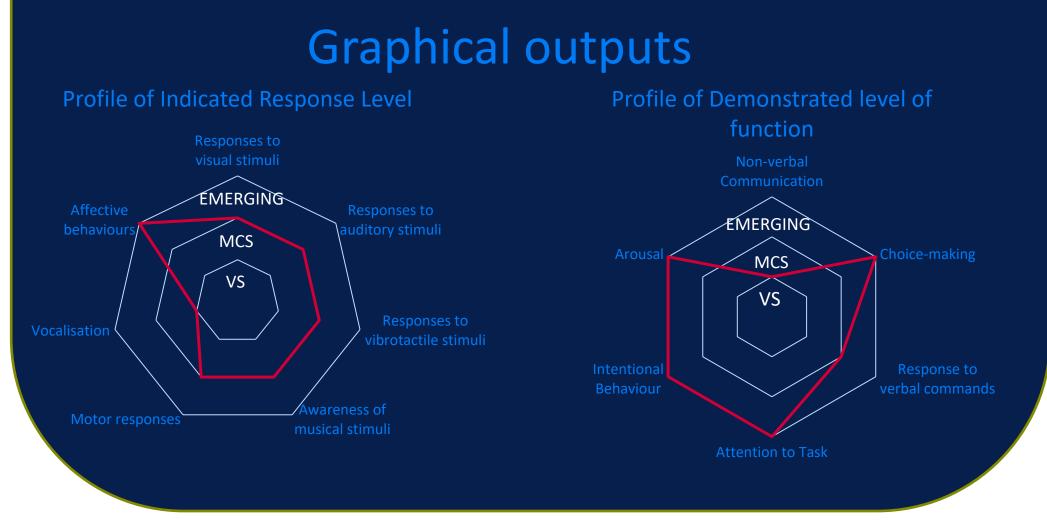
The MuSICCA is now being tested for Reliability, Validity, and Clinical utility⁴.

The purpose of the MuSICCA is to assess responsiveness across the auditory, visual, motor, tactile and communication domains in children with DoC

A music-based tool for assessment in children and young people with DoC

Standardised protocol involves

- 7 procedures, including live music, to elicit responses
- Potential for family involvement
- 20-30 minutes per clinical contact
- 15 items rate responsiveness across the auditory, visual, motor, vibrotactile and communication domains
- Guttman rating for 13 items and binary rating for 2 items



Method Confirm adaptations to MuSICCA **Face Validity** Select assessors for face validity (N=20) Invite music therapists, other professionals and carers, who understand Insufficient DOC and paediatric population, to test face validity of MUSICCA face validity Test face validity Selected music therapists, other professionals and carers test face validity of MUSICCA and provide feedback Sufficient face validity Recruit subjects Subjects' families are informed about the research and invited to participate Enrollment Assess subjects for eligibility Exclusion criteria Known hearing impairments Known profound visual Known musicogenic epilepsy Inclusion criteria (N=80) Seizure disorders that cause Between 2-18 years of age frequent and/or prolonged Assessed by the interdisciplinary team as having a disorder of consciousness English not first language Gain consent and gather pre-assessment info Subjects' families give consent Assessors gather pre-assessment information according to MUSICCA in standard clinical practice Data Collection -Conduct live assessments MUSICCA and other measures are conducted simultaneously over a 1-week period Part 1 First assessors conduct MUSICCA Second assessors conduct other measures Report and feedback assessment results Assess clinical utility Assessors compile reports and provide feedback Gather opinions of assessors, families, to subjects' families according to standard clinical healthcare professionals using questionnaire method Principal Investigators at each site send assessment results to the Chief Investigators Phase 4 Test reliability Data Assessors conduct a video ratings of their own live sessions 4-6 weeks after live assessment Collection -The video recordings are assigned to randomly selected, blinded Part 2 assessors. Then, the second assessors conduct video ratings Perform analysis of clinical utility Perform statistical analyses of Data The detailed methods of data collection and validity and reliability Analysis analysis will be developed by the statistician Convergent validity (comparing MuSICCA with CRS-R and Coma/Near Coma Scale) Discriminant validity (comparing MuSICCA with NCS-R)

Reliability:

Inter-rater (A1 $_{\rm V}$ vs A2 $_{\rm V}$) Internal consistency

Test-retest (A1_{L1} vs A1_{L2} // A1_L vs A1_V)

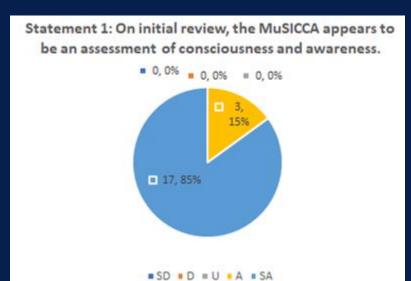
Findings from Phase 1: Assessment of Face Validity

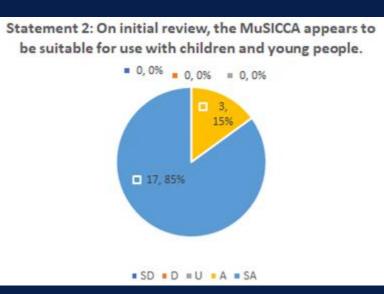
20 participants were recruited from The Children's Trust and the MATADOC training database, including:

- 10 MATADOC trained assessors
- 5 family members of children and young people with DoC
- 5 paediatric rehabilitation specialists (1 speech and language therapist, 1 occupational therapist, 1 physiotherapist, 1 psychologist, and 1 paediatrician).

Following a presentation about the MuSICCA, participants were asked to rate their level of agreement/disagreement with two statements. They were also asked to comment on the perceived strengths and weaknesses of the MuSICCA.

Responses were recorded using questionnaire forms.





Quotes from the participants

"Good to have guidance for parents/caregivers included"

"Assessment is child-focused"

"A tool that will allow assessment and then go on to inform a treatment plan (this will/should offer reassurance to parents that assessment is meaningful and not an end state."

"The rating form is very visual. I feel it is very helpful for analysing category."

"The assessment is easy and straightforward to use."

Conclusion

The MuSICCA appears to be suitable as an assessment of responsiveness of Disorders of Consciousness and may assist in diagnostic processes.

The MuSICCA is appropriate to use with children and young people with DoC.

References

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