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Music therapy for autistic people

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Question

What are the effects of music therapy (alone or added to standard care) for autistic people?

Context

Autism is a lifelong neurological condition that usually manifests in early childhood. Social interaction and social communication are the central areas of difficulty for autistic people. Music therapy uses music experiences and the relationships that develop through them and is delivered by a professional music therapist. The therapy enables people to relate to others, to communicate and to share their feelings. In this way, music therapy addresses the core challenges for autistic people. The application of music therapy requires specialized academic and clinical training which allows the music therapists to tailor the intervention to meet the individual's therapeutic goals and their specific needs. The aims in music therapy for autistic people can be wide including the work on communication and interaction, sensory processing and integration, affect regulation as well as creative and recreational needs that can lead to increased quality of life.

The Cochrane review update aimed to assess the effects of music therapy for autistic people, including children. The present version is an update of the previous review update published in 2014 with the original Cochrane review published in 2006.

Criteria for study selection

The review included studies comparing music therapy as a standalone or added to standard care with placebo, no treatment or standard care in people with a diagnosis of autism spectrum disorder. Placebo therapy consists of a similar intervention without the elements specific to music therapy such as play therapy without music, or music listening without interaction with a music therapist. The primary outcomes included global improvement, social interaction, non-verbal communication, verbal communication, quality of life, total autism symptom severity and adverse events.

Summary of the results

This review update included 16 new studies bringing the total number of included studies to 26 (with 1165 participants). Twenty-one studies included young children aged from two to 12 years. The other five studies included children, adolescents and/or young adults. Severity levels, language skills and cognition varied widely. The studies mostly investigated the short- and medium term effects of music therapy interventions with the intervention lasting from three days to eight months. Music was provided either individually or in group settings. Most studies were conducted in North America (12 studies) and Asia (seven studies), with four studies conducted in Europe.

Immediately after the intervention, music therapy, compared to placebo therapy or standard care, probably results in global improvement (RR*: 1.22 (95% CI^: 1.06 to 1.40); 8 studies, 583 participants, moderate-certainty evidence) and in a slight increase in quality of life (SMD$: 0.26 (95% CI: 0.06 to 0.49); 3 studies, 340 participants, moderate-certainty evidence). Moreover, music therapy probably results in a large decrease in total autism symptom severity (SMD: -0.83 (95% CI: -1.41 to -0.24; 9 studies, 575 participants, moderate-certainty evidence). Music therapy compared to placebo therapy and standard care may make little or no difference to social interaction or non-verbal communication immediately post-intervention (low-certainty evidence), though they may improve during the intervention. We are uncertain about its effects on verbal communication (very low-certainty evidence). Only two studies investigated adverse events. One of them reported no adverse events, while the other found very few adverse events (mainly pre-planned institutional stays) in both control and intervention group. This results in a very wide confidence interval and the range where the actual effect may be includes both an increase as well as a decrease in adverse events (RR: 1.52 (95% CI: 0.39 to 5.94); 2 studies, 326 participants, moderate-certainty evidence).

Unfortunately, very few studies examined the long-term effects of music therapy. Most studies measure outcomes immediately after the intervention i.e. within a month of concluding the therapy. Only one study studied outcomes between 6-11 months post intervention. Moreover, for some of the outcomes the certainty of the evidence remains limited mostly due to issues with the study design and lack of blinding: those who measured the outcomes often knew whether or not participants had received music therapy which may have influenced their assessments.

Compared to earlier versions of the review, however, the new studies helped to increase the certainty and applicability of this review's findings due to larger sample sizes, extended age groups, longer intervention durations and the use of validated scales measuring generalized behavior (e.g. behavior outside of the therapy context). The interventions in the newer studies also corresponded well with music therapy in clinical practice concerning methods and settings

Conclusion

Music therapy probably increases the chance of global improvement and probably results in a slight increase in quality of life and in a large decrease in total autism symptom severity immediately post-intervention. It may increase social interaction and non-verbal-communication during the intervention but not afterwards. The evidence on verbal communication is uncertain.

Implications for practice

This update shows that music therapy can not only have an effect on outcomes measuring autism symptom changes but also general domains such as quality of life which is very important to patients and their families. The fact that skills seem to improve during but not after the intervention could be due to the known challenge of skill generalization across contexts and interaction partners.

REFERENCE:

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* **RR**: risk ratio
^ **CI:** confidence interval
$ **SMD:** standardized mean difference