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Commentary

The scope and potential of music therapy in stroke rehabilitation

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Abstract

There is a growing interest in the use of music therapy in neurological rehabilitation. Of all the major neurological illnesses, stroke rehabilitation has been observed to have some of the strongest potential for music therapy's beneficial effect. The current burden of stroke has raised the need to embrace novel, cost-effective, rehabilitation designs that will enhance the existing physical, occupation, and speech therapies. Music therapy addresses a broad spectrum of motor, speech, and cognitive deficits, as well as behavioral and emotional issues. Several music therapy designs have focused on gait, cognitive, and speech rehabilitation, but most of the existing randomized controlled trials based on these interventions have a high risk of bias and are statistically insignificant. More randomized controlled trials with greater number of participants are required to strengthen the current data. Fostering an open and informed dialogue between patients, healthcare providers, and music therapists may help increase quality of life, dispel fallacies, and guide patients to specific musical interventions.

Introduction

Stroke is the third leading universal cause of death and disability [1]. A third of stroke survivors are dependent on others for their care; increasing number of stroke survivors create greater demand for novel interventions that interact with the mechanisms of spontaneous biological recovery [2], [3]. Rehabilitation is one of the critical components of patient care that mitigate post-stroke disability and dependency [4]. Stroke rehabilitation comprises a wide range of strategies, including skilled therapy interventions that address mobility and activities of daily living, evaluation and treatment of communication and cognitive impairments, and treatment of dysphagia [3, 4]. The current burden of stroke has raised the need to embrace novel, cost-effective, rehabilitation designs that will enhance the existing physical, occupation, and speech therapies [5]. Until the late 1990s, stroke rehabilitation was criticized for a lack of scientific evidence base [2]. However, the last two decades of scientific investigations on potential adjunct rehabilitation designs have positively changed this discernment [5]. Of all the major neurological illnesses, stroke rehabilitation has been observed to have some of the strongest potential for music therapy's beneficial effect [5]. Emerging randomized controlled trial (RCT) findings suggest that music therapy holds promise for stroke-related neurologic and neuropsychiatric impairments, including motor rehabilitation, speech regeneration, and cognitive recovery [6], [7], [8], [9], [10], [11], [12], [13], [14], [15], [16], [17], [18], [19], [20], [21].

Section snippets

Brain plasticity, music, and stroke rehabilitation

Brain plasticity refers to brain's innate ability to reorganize its function and structure in response to stimuli and injuries [22]. Following stroke, the plasticity process commences in an attempt to compensate for the lesion as well as for the remote effects. These changes may take place in the days, months, and years following the stroke [22], [23]. Researchers suggest utilizing this time-limited window of brain plasticity as this leads to the greatest gain in recovery [24]. Various...

Music therapy and neurologic music therapy

Music therapy is the clinical and evidence-based use of music interventions to accomplish individualized goals within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program [38], [39]. Neurologic music therapy is a domain of music therapy where evidence-based and standardized therapeutic music interventions address sensorimotor, cognitive, and speech and language dysfunctions resulting from neurological illnesses and impairments, as well...

Challenges and recommendations

Guidelines for Adult Stroke Rehabilitation and Recovery are developed by the American Heart Association/American Stroke Association [55]. In order to be recommended by the guidelines, music-based interventions require strong evidence in the form of large-scale rigorous clinical trials in multiple populations [55]. While RCTs report encouraging results for the effects of various music therapy interventions on several parameters, the quality of many RCTs on musical intervention in stroke...

Conclusion

Stroke rehabilitation is often multidimensional and requires an interdisciplinary, comprehensive, patient-centric and patient-directed approach to management and rehabilitation. Exploring the potential benefits of music is essential for advancing clinical practice. A genuine partnership between music therapists, speech therapists and physicians can draw on the strengths of each to benefit research and improve clinical practice. Patient experience will be far more positive if clinical practice...

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Declaration of competing interests

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