

Sansula sound massage: Significant response differences in glioblastoma versus other palliative care patients

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Abstract

Sound therapy, particularly vibroacoustic therapy (VAT), has emerged as a promising alternative approach utilizing sound vibrations and music for therapeutic benefits. This article delves into the application of sound and vibration in palliative care therapeutics, focusing on the broader field of vibrational medicine. Such interventions explore the potential synergies between sound therapy, vibration, and conventional treatments to enhance patient care. This particular case focuses on the use of the Sansula, a musical instrument similar to a kalimba, for sound massage sessions in palliative care and the particularly "painful" effect it had on glioblastoma patients.

Introduction

Palliative care is crucial for glioblastoma patients due to the aggressive nature of the disease and its poor prognosis (Armitage & Fonkem, 2023). However, there is a lack of definitive data guiding the provision of palliative care for neuro-oncology patients, including those with glioblastoma (Lin et al., 2012). It is recommended that palliative care should be engaged early, ideally at the

time of diagnosis, for glioblastoma patients (Armitage & Fonkem, 2023). Communication in the context of glioblastoma treatment can be complex due to cognitive deficits, emphasizing the importance of palliative care involvement (Boele et al., 2023).

Vibroacoustic therapy (VAT) has garnered interest for its potential therapeutic effects, with studies indicating positive outcomes in many health conditions. Vibrational medicine, encompassing specific frequencies to address energetic imbalances, aligns with the growing trend of complementary and alternative medicine. While sound and vibration therapies show promise, further research is crucial to optimize their mechanisms and integration with conventional treatments.

VAT involves the use of low-frequency sound vibrations and music to potentially offer therapeutic benefits. Research has explored the application of VAT in various conditions, such as cerebral palsy (Kantor et al., 2019). Moreover, studies have indicated that vibrational stimuli, including low-magnitude and high-frequency vibrations, can have positive effects on bone structure and muscle performance (Edwards, 2015). In

addition, whole-body vibration therapy has been investigated for its potential to improve bone mineral density and muscle strength in older adults (Lau et al., 2011).

The use of sound and vibration in medicine is part of the broader field of vibrational medicine, which examines the application of specific frequencies, noises or vibrations to treat energetic imbalances (Haider, 2024). This approach aligns with the growing interest in complementary and alternative medicine (CAM), where people seek unconventional treatments to complement traditional medical practices (Eisenberg et al., 1998). In addition, the efficacy of vibration therapy has been studied in various contexts, such as its impact on grip strength, endurance and muscle performance (Alam et al., 2021).

Although sound and vibration therapy have shown promise, further research is essential to better understand the mechanisms and optimise the use of these therapies. By exploring potential synergies between sound therapy, vibration and conventional treatments, healthcare professionals can offer more comprehensive and personalised care to patients

Materials

For this article, sound massage sessions were applied by means of a Sansula, a musical instrument similar to a kalimba.

The kalimba is an instrument of African roots that is also known by the names of *sanza*, *mbira* or *mambira*, among

others. Its origin is believed to be related to the Shona people and it is considered the national instrument in Southeast Africa. Historically, it was brought to Latin America by immigrant slaves and, from there, it has spread throughout the world. There are even researchers who consider it to be an ancestor of today's piano.

A kalimba consists of a box or a board, generally made of wood, which acts as resonator. In the case of having a wooden box, a sound hole will also appear. On top of the box, flexible metal or bamboo "keys", called tines, are attached at one end by a bridge and held free at the other. In this way, they are activated whenever pressed or released. The movement of these tines produces different sounds thanks to their difference in length, width and thickness which allows them to present different vibratory frequencies.

The location of the different notes in a scale has an intercalary position: the lowest tonic is placed in the centre and then the following notes are added to the left and right in alternating order.

The type of instrument can be described as a *lamellophone*, name describing the possession of metal or bamboo tongues (lamellae). However, in terms of resonance, as the sound vibration extends throughout its whole body, the kalimba can be classified as an *idiophone* instrument. This particular characteristic is what makes it a therapeutic tool of choice for the



Fig.1 Hokema Sansula in A minor. Front, side and back view. Image by Erica Alio-Warr.

application of sound massage and improvisation.

A sansula, on the other hand, is an instrument derived from the kalimba but with a more refined voice. Instead of being placed on a board, the tines in a sansula are fixed on a wooden rim covered by a thin membrane, in the style of a drum. Thus, the vibration of these metal “keys” activates the membrane which, in turn, activates the wooden rim. As a result, the sansula produces a greater quantity and quality of overtones. Moreover, as within the key, all the sounds harmonise with each other, it is very easy to use for beginners.

For the sessions described in this article, a Hokema German sansula, tuned in the key of A minor, was used.

Its voice is characterised by the rich presence of overtones and the enveloping vibration achieved by gently moving the sansula in the air.

Dimensions: 19cm x 15cm x 6.5cm.

Notes: A4, C5, C4, A4, A4, A3, F4, E4, E5, B4

Methods

Palliative care can be defined as care provided to improve the quality of life of patients suffering from a chronic, life-threatening, non-curable, progressive illness. This type of care is given to alleviate symptoms...

Between 2011 and 2015, the palliative unit at the University of Greifswald cared for around 360 patients per year. During that period patients were submitted to regular holistic therapy sessions as a complement to the conventional palliative medical treatment with beneficial results such as pain relief, psychological comfort, physical and mental relaxation, general stimulation, stress relief, assistance in the release of trauma, and human interaction and contact. (Alio-Warr, 2012).

In addition to the daily music therapeutic group activities, each patient received music therapy single sessions at least twice a week if desired. Here, the A minor Sansula was employed for individual sound massage sessions, aiming to aid pain

management and general wellbeing. Sound massage was applied not only by means of enveloping sound movements around the subjects but also by placing the instrument directly on the patients' body, thus using it as an extension of the resonance box.

Random observation revealed varied responses, particularly in glioblastoma patients. While all other patients reported a sense of well-being during the therapy, glioblastoma patients showed an absolutely different reception.

Glioblastoma is a rapidly developing and invasive type of cancer that arises in the brain or spinal cord from astrocytes, the cells that support neurons. Despite the aggressive nature of glioblastoma, extraneural metastases from this type of cancer are rare, with an estimated incidence of less than 2% (Ilango et al., 2018). Glioblastoma patients have a median overall survival of 16-21 months (Wu et al., 2021). The long-term survival rate for glioblastoma patients, defined as surviving more than 3 years from diagnosis, is only around 3-5% (Busch et al., 2019). Additionally, there is a small percentage of patients affected by glioblastoma multiforme who survive 3 years or longer (Caruso et al., 2017).

Generally, the percentage of patients with glioblastoma who are referred to palliative care within one year of death is approximately 34% (Shieh et al., 2023). At that moment, regarding music therapy interventions, the glioblastoma group represented less than 10% of the total number of patients. This may have been due to the severity of symptoms which prevented most glioblastoma

patients from active participation in the non-conventional therapeutic activities.

With this sound therapy intervention, over 90% of the patients who received sound massage sessions reported positive responses related to a sense of well-being and relaxation. However, a small percentage of patients, less than 10% of those treated, experienced the complete opposite response. These patients asked to end the session immediately, as they found what they called "pain" caused by the Sansula sound intolerable.

The observation here is curious, as each and every one of the patients who complained of this discomfort suffered from Glioblastoma. Not so, patients with other types of brain tumours, who still belonged to the pleasurable response group.

Taking into account alternative therapy approaches that consider sound vibration as a tool capable of acting directly on the patient's organism, research time should therefore be devoted to discovering the mechanisms of this painful response in cases of glioblastoma.

Discussion

The use of Sansula in palliative care sessions demonstrated a high rate of positive responses in patients, except for those with glioblastoma, who experienced extreme discomfort. This observation highlights the need for further research to understand the mechanisms underlying these contrasting responses, especially in the

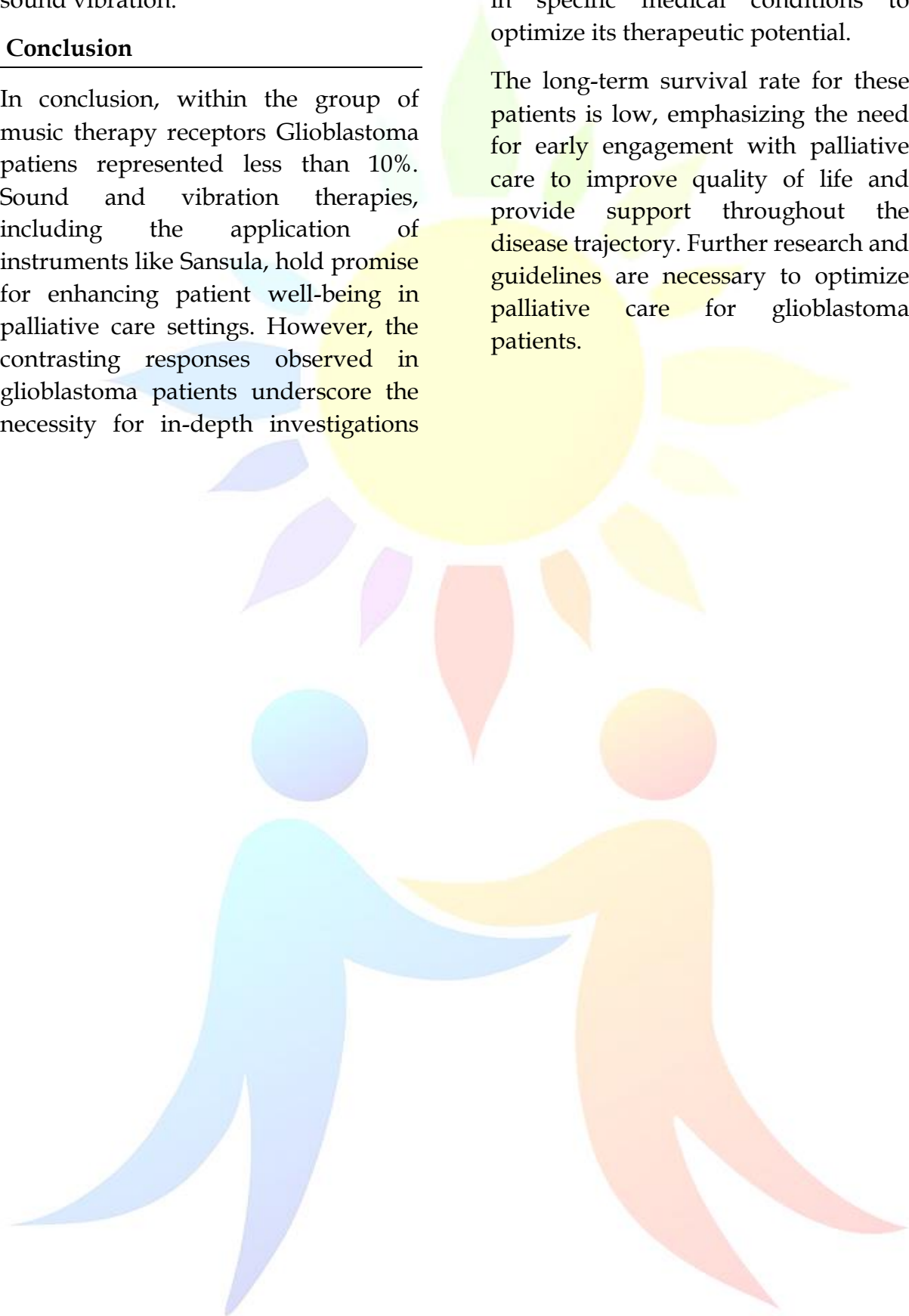
context of alternative therapies like sound vibration.

Conclusion

In conclusion, within the group of music therapy receptors Glioblastoma patients represented less than 10%. Sound and vibration therapies, including the application of instruments like Sansula, hold promise for enhancing patient well-being in palliative care settings. However, the contrasting responses observed in glioblastoma patients underscore the necessity for in-depth investigations

into the mechanisms of sound therapy in specific medical conditions to optimize its therapeutic potential.

The long-term survival rate for these patients is low, emphasizing the need for early engagement with palliative care to improve quality of life and provide support throughout the disease trajectory. Further research and guidelines are necessary to optimize palliative care for glioblastoma patients.



References

Alam, M., Ali Khan, A., Farooq, M. (2021) Effects of vibratory massage therapy on grip strength, endurance time and forearm muscle performance. *WOR*

Alio-Warr, E.F. (2012) Germany Integrating a Holistic Medicine Approach to Palliative Care. *International eHospice Magazine*. Palliative care news, views and inspiration from around the world.

Armitage, A., Fonkem, E. (2023) Supportive care of neurodegenerative patients. *Front. Oncol.*

Boele, F., Butler, S., Nicklin, E., et al. (2023) Communication in the context of glioblastoma treatment: A qualitative study of what matters most to patients, caregivers, and health care professionals. *Palliat Med*

Busch, S., Talamini, M., Brenner, S. et al. (2019) Circulating monocytes and tumour-associated macrophages express recombinant immunoglobulins in patients with glioblastoma. *Clinical & Translational Med.*

Caruso, R., Pesce, A., Wierzbicki, V. (2017) A very rare case report of long-term survival: a patient operated on in 1994 for glioblastoma multiforme and currently in perfect health. *International Journal of Surgery Case Reports*

Edwards, J. (2015) Vibration stimuli and the differentiation of musculoskeletal progenitor cells: Review of in vitro and in vivo results. *WJSC*

Eisenberg, D., Davis, R., Ettner, S. (1998). Trends in the use of alternative medicine in the United States. *JAMA*

Haider, R. (2024) *Energy Medicine: Cutting-Edge Modalities*. *IJIS*

Ilangovan, V., Kumar, R., Sankaran, V., et al. (2018) Aggressive brainstem glioblastoma in a 9-year-old child with neck node metastases: A case report and literature review. *J Pediatr Neurosci.*

Kantor, J., Kantorová, L., Marečková, J. et al. (2019) Potential of vibroacoustic therapy in individuals with cerebral palsy: An extended narrative review. *IJERPH*

Lau, R., Liao, L., Yu, F. et al. (2011) The effects of whole-body vibration therapy on bone mineral density and leg muscle strength in older adults: a systematic review and meta-analysis. *Clin Rehabil*

Muscari Lin, E., Rosenthal, M., Le, B., et al. (2012) Neuro-oncology and palliative care: a challenging interface. *Neuro-Oncology*

Shieh, L., Ho, C., Guo H., et al. (2014) Comparison of healthcare utilisation and life-sustaining interventions between patients with glioblastoma receiving palliative care or not: A population-based study. *Palliat Med.*

Wu, A., Ruiz Colón, G., Aslakson, R. et al. (2021) Utilisation of palliative care services and advance care planning for adult patients with glioblastoma: A systematic review. *Cancers*