

The presence of aphasia therapy in music therapy training in Hungary

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Abstract

Both Hungarian and international studies report on the results of music therapy for people with aphasia. The methods and techniques thus learned, along with the results achieved with methods used in our own therapeutic practice, all confirm the relevance of music therapy for aphasia. There has been no significant breakthrough in the field of music-based therapies for language and speech rehabilitation in Hungary. This is closely linked to the low number of music therapy specialists in the clinic. According to our hypothesis, one of the reasons for this is the lack of training. The aim of our research was to investigate the extent to which aphasia therapy is included in the training of music therapists in Hungary. A questionnaire survey was conducted among active music therapy students and former students of two higher education institutions. 81 students received the questionnaire, 39 of whom responded. The results show that 46% of respondents regarded music therapy for aphasia not being included in the curriculum at all. Considering that people with acquired language and speech deficits, whether temporarily or permanently affected, constitute a significant social group, there is a need for more emphasis in training in this area.

Keywords: music therapy; aphasia; music therapist training; language rehabilitation

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Definition of aphasia

The language impairment that remains as a result of various brain injuries, but most commonly a stroke in the dominant language hemisphere, is called aphasia (Cocquyt et al. 2017). Aphasia symptoms affect both the expressive and receptive sides together, but to different degrees (Molnár-Tóth 2020b). Multimodal dysfunction can be manifested in different modalities, whether in spoken language, writing, reading or arithmetic, separately or cumulatively, and can occur at any language level (Mészáros 2007). There is also often a deficit in working memory (Majerus 2018). From the 19th century onwards, several typologies became known, classifying the different types of aphasia according to the localization of the lesion or according to the groups of symptoms. Although the different approaches are related, since the location of the damaged brain areas predestines the symptoms that are likely to appear, they are not a one-to-one correspondence, since holistic properties are associated with the brain areas responsible for different language

functions, and individual differences in the localisation of language functions may also occur (Bánréti 2014).

Types of aphasia

The different types of aphasia are distinguished according to the retention or confusion of four major functions - fluency, speech understanding, imitation, and naming (Molnár-Tóth 2020a). See Table 1.

Aphasia type	Fluency	Speech understanding	Imitation	Naming
Broca	-	+	-	-
Transcortical motor	-	+	+	+/-
Isolation	-	-	+	-
Global	-	-	-	-
Anomic	+	+	+	-
Conduction	+	+	-	-
Transcortical sensory	+	-	+	-
Wernicke	+	-	-	-

Table 1. Types of aphasia in terms of retention and impairment of specific language sub-skills. Source: Based on Mumenthaler 1989, edited by Eszter Juhas-Kiss

Incidence and prevalence of stroke

The incidence of stroke in Hungary is estimated at around 50 000 people per year (Fehérné Kovács 2009). Only 2/3 of stroke patients survive after a cerebrovascular accident, one-third die within a year (Szöcs et al. 2016). The annual number of cases, with the addition of post-stroke patients from previous years, is now around 200 000. About 40% of survivors of an acute stroke have an acquired language disorder. Some of those affected recover spontaneously, but a significant proportion remain in a permanent state and require speech and language rehabilitation.

Music therapy

“In music therapy, a trained music therapist uses music or musical elements (sound, rhythm, melody, harmony) in a planned process to facilitate communication, relationships, learning, expression, mobilization, and organization. In addition, it has therapeutic effects in physical, emotional, mental, social and cognitive areas. The aim of music therapy is to explore an individual’s potential and/or restore impaired

functions, thus enabling better intra-psychic and/or interpersonal integration and, as a result of prevention, rehabilitation or treatment, a qualitatively better life¹.“ This was the definition and objectives of music therapy at the World Congress of Music Therapy in Hamburg in 1996, which can be found on the website of the Hungarian Music Therapy Association (Magyar Zeneterápiás Egyesület, n.d.).

Neurophysiological background of music therapy for aphasia

The most common way of classifying aphasia in Hungary today is the so-called clinical functional approach, which classifies aphasia types according to the functioning of four basic functions: fluency, speech understanding, imitation, and naming. The neurological background of this typology is based on the theory of brain localisation (Molnár-Tóth 2020b), according to which the different mental functions are localised in the brain, i.e. a specific cortical area is responsible for a specific ability. In terms of verbality, the left hemisphere dominates in about 95% of people. The inferior, dorsal area of the frontal lobe, Broca's area, is responsible for the motor production of speech, the lesion of which results in a language dysfunction in which verbal expression is impaired but language perception is relatively preserved. In contrast, damage to the superior posterior area of the temporal lobe and the area extending to the parietal lobe, the Wernicke area, results in impaired speech comprehension, while speech production remains relatively intact (Crystal 1997). Making music can trigger plastic changes in the brain. Singing, in particular, can be a valuable therapeutic tool, since it is a universal form of musical expression that is as natural as speech, and the muscles associated with speech are directly stimulated by breathing, tone production, articulation and resonance during the production of musical sounds. Singing naturally contributes to maintaining good health and physiological well-being by benefiting respiratory and cardiac functions, but the vibrations generated in the body by the sounds produced also serve to improve mental harmony (Lovász 2006). As a result of neuroplasticity, singing can create new, alternative neural pathways that can bypass dysfunctional regions of the brain that have been damaged (Wan et al. 2010). The arcuate fasciculus (AF) is a bundle of fibres that connects the temporal lobe to the motor regions of the frontal lobe. The left bundle plays a particularly important role in language processing. The left AF of healthy people with typical left hemisphere language dominance is usually larger. However, it has been observed that professional singers have a more developed right AF than their non-musician counterparts, presumably due to years of singing. When the right AF of a chronic patient with nonfluent aphasia (no left AF due to a large lesion) was studied before and after melodic toning therapy, the AF showed structural adaptations after a long period of intensive therapy. Comparing patients with chronic aphasia treated with music and non-music based speech and language therapies, it was shown that melodic intonation therapies resulted in more right hemisphere changes. These structural and functional brain changes

¹ <https://magyarzeneterapiasegyesulet.hu/mi-a-zeneterapia/>

are associated with improvements in language and speech skills (Juhos-Kiss et al. 2023; Schlaug et al. 2010).

Music therapy for aphasia

Since the middle of the 20th century, several schools of aphasia therapy have been established in Europe and the United States of America (Hegyi 1995). In Western Europe, however, since the 1950s, there has been a growing trend to include musical elements as a therapeutic tool in rehabilitation. A Hungarian researcher, in the 1950s, introduced a new approach to speech and language therapy by using Hungarian folk songs and introducing singing and rhythm as speech stimulation tools (Varga & Geréb 1958). Melodic Intonation Therapy (MIT), published in the 70's, is used all over the world (Albert et al. 1973; Sparks et al. 1974). Thaut and Hoemberg' (2014) handbook describes the target groups, protocols and effectiveness of music therapy methods in the neurological field (Thaut & Hoemberg 2014). Several studies have demonstrated the effectiveness of MIT in the clinical setting (Norton et al. 2009; Schlaug et al. 2010; Zipse et al. 2012). In addition to the original MIT version, many adaptations and new versions have been put into practice over the past 50 years (Zumbansen et al. 2014). The Ronnie Gardiner Method (RGM), a method based on rhythm and melody, which originated in the world of jazz music, gained ground in neurorehabilitation in Europe and some countries outside Europe in the 1980s, starting in Sweden (Pohl 2018). In addition to these, many other methods and techniques based on musical elements are used in aphasia therapy around the world (Juhos-Kiss & Pusztafalvi 2022; Thaut & Hoemberg 2014) (Juhos-Kiss & Pusztafalvi 2021) (Kim & Tomaino 2008; Lim et al. 2013; Raglio et al. 2016; Tomaino 2012).

Music therapist training in Hungary

Music therapists are trained at two higher education institutions in Hungary. The University of Pécs was the first to accredit the complex art therapy education programme in 1990, followed by Bárczi Gusztáv Faculty of Therapeutic Pedagogy at Eötvös Lóránd University, which started the holistic approach in 2003 (Szabadi 2020). Both institutions offer a two-year diploma-based specialised further education programme with theoretical and practical elements.

The presence of knowledge about music therapy for aphasia in music therapy training - A questionnaire survey

Background of the research

In a previous study conducted in 2022 (Juhos-Kiss et al. 2023), we investigated the number of music therapists involved in aphasia therapy in Hungarian hospitals. In light of the results of this research, it can be concluded that a disproportionately small number of trained music therapists are employed in domestic healthcare institutions. One of the many reasons for this is that even within aphasia therapy

teams, few people are aware of the existence of music therapy methods for the treatment of aphasia and their direct and collateral effects. We did not find any music therapists in any of the active neurology and stroke departments. And only two hospital rehabilitation departments employ a total of 4 music therapists in language and speech development for stroke survivors. When asked about the reason why they did not employ a music therapist, the chief physicians of the departments pointed to a lack of resources and a lack of specialists (Juhos-Kiss et al. 2023).

Subject of the research

In our questionnaire survey, we investigated the knowledge of music therapists and music therapy students about music therapy for aphasia. The survey was conducted in the academic year 2023/2024. The first part of the questionnaire measured the demographic characteristics of the respondents. In addition to gender and age, we asked whether the respondent was a graduate music therapist or a student music therapist. In the former case, we asked about the year of graduation, and in the latter case we recorded the stage of the student's training. The remaining part of the questionnaire was devoted to professional questions.

We asked participants if they were familiar with the concept of aphasia. If the answer was yes, they were asked to give a concise definition of the term. Respondents were asked to name the source through which they had encountered the term aphasia. They then identified the item from those given which they believed to be the most common cause of aphasia. They answered the question about the extent to which they had learned about aphasia therapies based on musical elements during their training as music therapists, and then they named the method they had learned about in their training as music therapists and briefly described its essence. As regards to the nature of the rehabilitation, we asked whether they considered complex development to be important and, as regards to the extent of the rehabilitation, whether they considered the services currently provided free of charge or available to people with aphasia to be sufficient. Furthermore, whether aphasia therapy could be more effective if a music therapist was employed in the institutional multidisciplinary team alongside the speech therapist, or if people returning from hospital with speech and language deficits received regular music therapy services funded by social security.

Finally, participants were asked in which areas they think music therapy could play a more important role, and in which areas they personally currently use music therapy, or, if a student, in which areas they will plan to use music therapy after completing their training.

Sample

We asked the study department of the music therapy universities to help us distribute the questionnaires. The competent study lecturer of the University of Pécs sent the questionnaire to 61 people, including active students and former graduates of music therapy. At Bárczi Gusztáv Faculty of Therapeutic Pedagogy of Eötvös Lóránd University we were informed that they were not able to send the questionnaire to former students, so we could only include currently active students, of whom there are 20 this academic year. So a total of 81 students received the questionnaires. The total number of respondents was 39.

Results

In terms of demographics, we found that 7.7% of respondents, i.e. 3 of them were male, and 92.3%, i.e. 36 of them were female. Distribution by age was as follows: 7.7% was between 20-25 years old, 23.1% between 26-30 years old, 9 respondents, and 6-6 respondents between 31-35, 36-40 and 41-50 years, i.e. 15.4% per category, while the proportion of respondents aged 50 and over was 23.1%, i.e. 9 of them. Less than half of the respondents, 46.2%, i.e. 18 of the respondents completed the survey as music therapy students and 21 of them were music therapy graduates. Of the latter, 9 are not currently practising. 50% of music therapy students are in the first stage of training and 50% are in the final stage. 43% of music therapists completed their studies in 2022, the rest earlier. The oldest graduates were awarded in 1995.

85% of all respondents, 33 people, know the concept of aphasia and are able to give a concise and correct definition of aphasia and know the main cause of this language disorder.

DO YOU KNOW THE CONCEPT OF APHASIA?

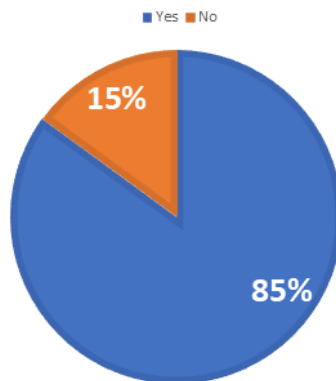


Figure 1. Questionnaire question on knowledge of the concept of aphasia

When asked about the source of their knowledge of the concept of aphasia, only 12 (31%) say that they had encountered it during their studies, 2 of them refer specifically to the music therapist training, while 10 describe other, earlier studies or do not specify the source of their studies. The reason why they do not cite music therapy training as a source of information about aphasia and its music therapy is that the participants in the training tend to associate music therapy with psychotherapy (Fekete 2020) and focus on more general music therapies rather than specific neurological or language disorders. The individual interests and prior training of the students may also be a determining factor for the topics of the training. However, we do not know about this because the questionnaire does not ask about the participants' basic qualifications.

Other sources mentioned include their other studies, their current work, the Aphasia Association and its Vocal Singing Ensemble, fellow music therapists, and their own individual research.

On another point, when asked about the extent to which they had acquired knowledge about music-based aphasia therapies, 46% said it was not part of their curriculum. 54% had encountered music therapy for aphasia during their studies, but only tangentially. None of the respondents indicated that they had received sufficient information during their training.

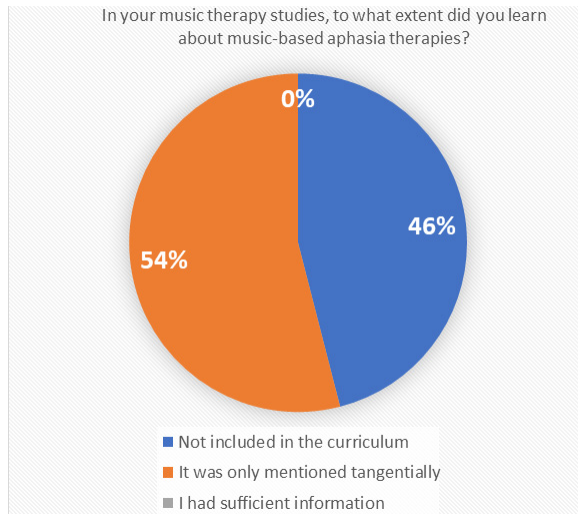


Figure 2. Questionnaire question on the emphasis given to music therapy for aphasia in the music therapist training curriculum

We asked them which music-based aphasia therapy method they had been introduced to during the training. They could choose from three methods most commonly found in the literature – Melodic Intonation Therapy, Ronnie Gardiner Method, Therapeutic Singing – or they could give their own answers. Almost half of the respondents, 46%, said they were not familiar with music therapy methods for aphasia. 31% indicated one of the methods listed. While the remaining 23% had

learned about such knowledge from other sources or they found out from their own experience in therapy that listening to music and singing is helpful in treating speech, language and other communication disorders, but had not learned any specific method. We asked them to briefly explain the method that they have heard of. This request was adequately met by those who completed the questionnaire.

In the further part of the questionnaire, we asked whether complex development is considered necessary for the effective rehabilitation of the quality of life of people with aphasia and what role they attribute to the music therapist. 100% of the respondents agreed that complex therapy by a multidisciplinary team, including a music therapist alongside the traditional participants is essential for successful rehabilitation. In addition, 31% of respondents described the current free, state-provided professional assistance for the rehabilitation of people with aphasia as unsatisfactory, and all respondents considered it necessary for people with aphasia returning from institutional rehabilitation to receive regular music therapy - funded by social security - as a continuous and sustained provision of therapy is an important condition for the successful treatment of acquired language disorders.

Conclusion

Weaknesses of the research: the sample is small, we can only infer the quality of the training courses in the current or recent years, and there is little data on the experiences of previous years. The available results of the questionnaire survey suggest that the training of music therapists in the country does not provide students with sufficient information on the topic of music therapy for aphasia. This is a gap in the training of professionals, which is a barrier to the expansion of neurological music therapy in clinical practice, to the increasing the complexity of institutional aphasia rehabilitation, and to addressing the long-term treatment of aphasia in the residential setting.

Aphasia rehabilitation activities in health care institutions are not sufficient in volume, number of professionals or national coverage to ensure that all people with aphasia receive the care they need. Although the gradual expansion of stroke units has led to positive changes in the acute care field, the institutional system for aphasia rehabilitation is not up to the expectations it should be. Civil society organisations (*Magyar Rehabilitációs Társaság*, n.d.; *Magyar Stroke Társaság*, n.d.) (*Magyar Logopédusok Szakmai Szövetsége*, n.d.) (*Magyar Fonetikai Foniátriai És Logopédiai Társaság*, n.d.) (*Afázia Egyesület*, n.d.; *Angels*, n.d.; *Démoszthenész Egyesület*, n.d.) play an important role in reducing this deficit by trying to provide the important and necessary services to people with aphasia and their families that the state system cannot provide.

The results of the present questionnaire survey and the previous research (Juhos-Kiss et al., 2023) show that the problem is complex and that further research is needed to explore all the causes.

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