

The influence of Brazilian music on mental health and well-being

Ana Flávia David Barroso de Souza,

Faculty of Pharmacy, Federal University of Barreiras, Bahia, Brazil, anaflaviabs98@gmail.com

Abstract. Updated studies prove that good music has the power to promote well-being, modify our thoughts and emotions, release dopamine and positively affect our brain. Therefore, selecting quality music will certainly contribute to the management of our thoughts and emotions as proposed by author and psychiatrist Augusto Cury in his theory of multifocal intelligence. In this article I present the direct relationship between managing thoughts and mood and selecting good music to listen to and how this affects the cognitive system. Therefore, it is worth highlighting that some musical genres presented better results and numerous benefits for listeners, including the harmonious Brazilian music of the Bossa nova, Samba and Forró genres, which mostly provide: calm, relaxation and joy. Samba, for example, makes you want to dance. The sound of the drums hypnotizes the viewer and causes pleasure. Below, studies carried out to try to understand this phenomenon will be presented.

“And anyone who was seen dancing was considered crazy by anyone who couldn’t hear the music” (Friedrich Nietzsche)

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1. Introduction

Brazilian music is made up of diversity, facets and musical genres that predominantly address multiculturalism in the country. It is possible to identify multiple genres that make up Brazilian musical rhythms become authentic and original, at the same time that they affect the brain in a very specific and peculiar way. Thus transmitting sensations, feelings and emotions such as relaxation, joy and the desire to dance. The harmony and melody of Brazilian rhythms were elaborated in detail to understand these specifications. Therefore, first it is necessary to understand how musical processing and the human brain works. Interrelating this knowledge with the Theory of Multifocal Intelligence, it is correct to say that to have a better quality of life, improve mental health and good mood it is necessary to select good music to listen to, as this action will influence your thoughts and feelings.

2. Music Processing and the Human Brain

The relationship between music and the brain has

been extensively researched over the past century, from the authoritative work published by Critchley and Henson (1977) titled “Music and the Brain” to a modern update of the literature from intervening decades by Stewart et al. (2006).

During the late 19th century, German researchers published numerous studies analyzing the disturbance of musical functioning in patients with brain damage, observing how focal injuries affect musical activities. These studies were able to highlight how music influences the brain. [1]

Firstly, to study the action of music on individuals, we need to understand the following facts:

Music is made up of three basic elements: Harmony, Melody and Rhythm. Harmony is the pleasant set of musical notes (chords, for example guitar), melody is notes played separately (piano, sax, voice) and rhythm is the metric-temporal notion of music (beat, for example drums).

Musical processing involves 3 stages: musical perception, recognition and emotion. Primary auditory cortex and the superior temporal gyrus are areas responsible for musical perception. The primary cortex is sensitive to pitch perception, while

the auditory association cortex is sensitive to more complex linear processing such as melody and non-linear processing such as Harmony. The rhythm is processed in the cerebellum, basal ganglia, and superior temporal lobes. Music and emotion recognition involves the orbitofrontal and limbic systems, they are involved with musical memory and emotions linked to music. The figure below will show some locations relating to the brain areas responsible for hearing, attention, emotion and triggering memories.

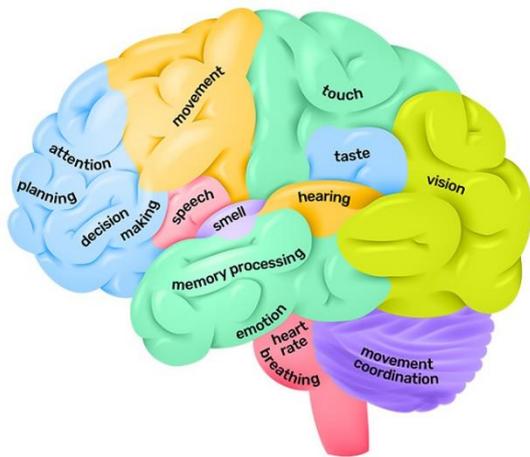


Fig. 1 (QBI)

The primary auditory cortex receives thalamic afferents from the medial geniculate nucleus, which in turn connect through networks with the auditory association cortex, mesolimbic systems, and other multisensory cortices.

Music can promote the release of dopamine thereby flooding the dopaminergic D2 receptor systems.

2.1 Music Therapy

Complementing all studies on music, we have music therapy.

Recent in science, this area of knowledge should be considered “a transdisciplinary hybrid around two main fields: Music and Therapy” [2]

“Music therapy is a systematic process of intervention in which the therapist helps the individual to promote health using musical experiences and the relationships that develop through them as dynamic forces for change” [3]

Physician and author Oliver Sacks has spent 40 years studying the human brain and shedding light on a range of neurological disorders through compassionate storytelling of his patients' stories. His newest collection of clinical short stories, *Musicophilia*, examines the uniquely human power of music.

The neurologist explains that there is no single musical center in the brain, but rather 20 to 30

networks spread across all the regions they analyze different components of music, from tone to melody. That's why a symphony that moves some people to tears is perceived by others as the cacophonous clanking of pots and pans, a condition known as amusia. Sacks also speaks of people haunted by musical hallucinations, in which they hear a set of melodies, or even complete choirs, inside their heads, a phenomenon that one patient describes as their “intracranial jukebox.”

To complement this, we can reflect on the thoughts of Molly Warren, Master in Music Therapy from Colorado State University: “music is a great ally in the recovery phases of trauma and grief, in addition to serving as a calming agent and regulating emotions”.

3. Multifocal intelligence theory

This theory proposes that we are highly capable of selecting and managing emotions and thoughts in the following way: using global references to shape our social and emotional skills.

“The theory of Multifocal Intelligence demonstrates that, when a human being enters his own memory and retrieves, in thousands of seconds, information, among billions of options, and builds a chain of thought, he performs the greatest spectacle of existence: art to think” [4]

3.1 Augusto Cury

Augusto Cury is a writer, psychotherapist, psychiatrist and author of the best-seller “Theory of Multifocal Intelligence: analysis of the construction of thoughts and the formation of thinkers”. An internationally recognized researcher, his book sold 25 million units in Brazil and were published in more than 70 countries.

According to the author, through adequate stimulation and training, we can shape our own social and emotional skills. This generates several benefits for our well-being.

For Augusto Cury, we can be protagonists in building and managing our intrapersonal and interpersonal skills, that is, with ourselves and the people around us. It is from studies in this perspective that he developed the Theory of Multifocal Intelligence.

It is an approach that analyzes the functioning of the mind and the phenomenon that construct thoughts and emotions, with contributions from the areas of Psychology, Philosophy and Sociology. As the name of the theory indicates, the idea is that we can develop our intelligence in a multi-focused way, including the emotional and social spheres. [5]

4. An excellent way to manage emotions and thoughts is to carefully select the music you listen to

As already seen, listening to music is a mechanism for balancing emotions and changing mood.

The therapeutic potential of music has been widely explored in cognitive science. The cognitive effects of music are well documented in the literature, although these effects have been subject to scrutiny.

4.1 “MOZART” effect

Rauscher et al. (1993) observed an immediate increase in spatiotemporal reasoning in college students exposed to 10 minutes of Mozart's Sonata K448 (Rauscher et al., 1993). The authors later coined the term “Mozart effect”. Studies on Parkinson's disease, senile dementia, and attention-deficit/hyperactivity disorder have also described benefits of listening to music (Pacchetti et al., 2000; Foster and Valentine, 2001; Rickson and Watkins, 2003 [6])

The Mozart effect is a phenomenon that suggests that listening to music by composer Wolfgang Amadeus Mozart can improve concentration and reasoning ability. His compositions, especially his piano sonatas and symphonies, are known for their complex structures and rhythmic patterns, stimulating brain activity. [7]



Fig. 2 - Euterpe (1775). Emmanuel Jakob Handmann (Swiss, 1718-1781). Oil on canvas. Jegenstorf Castle.

Euterpe – The Muse of Music in Greek mythology. She was known as the giver of pleasures, the reason they called her that was because of the well-being felt by people when listening to a song. Plato revealed special admiration for the study of the effects of music on human beings and, in particular, for its therapeutic effects. He stated that “music is the medicine of the soul” and that it reaches the body through it. [2]

5. Brazilian music

Brazil is a country that hosts cultural manifestations of different types. Music plays an important role in preserving these traditions, as it is through music that some groups are able to transmit traditions to new generations.

Brazil has several musical genres of Brazilian origin, among those that stand out most for providing relaxation and tranquility are the rhythms of the Bossa Nova and MPB genres.

Samba and Forró, in turn, have the power and ability to awaken the desire to dance in the listener and provide a feeling of happiness and pleasure.

6. Music with soft rhythms, such as Jazz, Bossa Nova and Downtempo, has a calming effect on the brain

These music genres feature relaxing beats and engaging melodies, which help lower blood pressure, reduce anxiety, and create an overall sense of well-being. [8]

7. Brazilian Musical Genres

7.1 Bossa Nova and MPB (Popular Brazilian Music)

Bossa nova is a relaxed style of samba developed in the late 1950s and early 1960s in Rio de Janeiro, Brazil. It is mainly characterized by a “different beat” that altered the harmonies with the introduction of unconventional chords and an innovative syncopation of traditional samba from a single rhythmic division,

7.2 Samba

Samba is a musical rhythm of Brazilian origin, originating in the city of Rio de Janeiro, with strong influences from samba de roda, a cultural movement predominant in the interior of Bahia, in the Recôncavo region, northeast of the country.

A samba composition mainly uses percussion instruments, such as the pandeiro, surdo, pandeiro, ganzá and agogô, and string instruments, such as the cavaquinho and guitar. The cuíca, an instrument obtained through the friction of a press, is also important to the genre. [9]

7.3 Forró

Forró is a popular Brazilian musical form that combines folk and modern sounds with a rhythmic beat.

Forró, or forró-pé-de-serra, is a generic term that refers to a musical genre and dance style popular in Brazil, as well as events where musicians and dancers perform. Forró music is based on various musical styles, from Afro-Brazilian music such as

Samba and Baião to European polkas. On the other hand, forró dancing is inspired by Cuban salsa and Samba de Gafieira, a Brazilian ballroom dance.

8. How the Samba rhythm affects the brain:

“And anyone who was seen dancing was considered crazy by anyone who couldn’t hear the music” (Friedrich Nietzsche)

Samba makes everyone want to dance. The sound of the drums hypnotizes the viewer and causes pleasure.

Experiment shows that the synchrony between beats triggers strong emotions and activates brain areas associated with motor activity.

An experiment carried out by German and Brazilian scientists from the Max Planck Institute for Human, Cognitive and Brain Sciences (MPI CBS) and the D’OR Institute for Research and Education, in Rio de Janeiro, shows that the synchrony between drum beats causes a greater and stronger emotion and, consequently, greater activation of brain areas responsible for rhythm and movement.

Therefore, scientists believe that samba beats can also help in the neurorehabilitation of patients who have suffered a stroke.

Neuroscientist and neuropsychologist at MPI CBS and Leipzig University Hospital, Annerose Engel, responsible for the study, wanted to know why percussion causes so much joy and an irresistible desire to move.

To answer this and other questions, such as, for example, what happens in the brain when we let ourselves be carried away by the beat of drums, Dr. Engel traveled to Rio de Janeiro and hired a renowned percussion master from a Rio de Janeiro samba school. Together, they recorded a song with the nine rhythmic instruments of a typical samba school drum kit. [10]

8.1 Greater precision and volume, greater desire to dance

The scientist then created four versions of songs in which the interaction between groups of instruments was manipulated, based on the firm and accentuated pulsation of the drums: the original version and versions with delays of 28, 55 and 83 milliseconds for the drums in relation to the others instruments.

The tests were carried out with participants who liked samba. Most also knew how to play rhythms of the musical style on an instrument.

The different versions were heard for the first time by 12 volunteers at varying volumes; loud (85 dB) or very loud (95 dB). Each person rated how strong the desire to move was and how pleasant they found the music.

In a second experiment, another 21 participants

listened to music while their brain activity was measured with functional magnetic resonance imaging.

More precisely timed sections were perceived as more enjoyable and lively. The louder the arrangements were presented, the stronger the desire to move. The maximum effect occurred when precisely timed instruments were played at high volume.

Interestingly, participants with better rhythmic skills were more sensitive to the synchrony manipulation. [10]

8.2 And how exactly does the rhythmic pattern – or “groove” – act in the brain?

According to the study, the more precisely timed instruments more vigorously activated a network of brain regions involved in controlling movement and perceiving rhythm. More specifically, the supplementary motor area, the left premotor cortex and the left frontal gyrus.

These regions are linked not only to movement, but are also activated when we predict something, a fundamental function of perception.

Music is already used to treat strokes or other neurological diseases. Firstly, it helps motivate patients to move, but pacing can also help them relearn movement sequences and improve attention and many other cognitive functions.

“These findings could even help us with neurorehabilitation,” says Engel.

Apparently, a network of brain areas associated with particularly strong movements is activated, which is often necessary for rehabilitation.

Music like samba, which has an intense “groove factor”, can be particularly suitable for this, explains the neuropsychologist. The researchers also assume that these signs would also apply to other musical styles or even ritual dance music from other cultures.

“Activity in the network of these motor regions may form the neural basis for beat detection, especially the pronounced desire to move.” [10]

9. References

- [1] Kaique Miranda, O Poder da Música no Cérebro – Article review “*Music and epilepsy: A critical review*”, 2013
- [2] CHAGAS, M. *Musicoterapia - Desafios entre a modernidade e a contemporaneidade*. Rio de Janeiro: MauadX e Bapera, 2008. 93 p.
- [3] BRUSCIA, K. *Definindo Musicoterapia*. Rio de Janeiro: Enelivros, 2000. 286 p.
- [4] Augusto Cury- *12 semanas para mudar uma vida*,

Brazil, Sep, 2008. 304 p.

- [5] Augusto Cury- *Meet Augusto Cury, author of the Theory of Multifocal Intelligence (TIM) 2020*. <https://escoladainteligencia.com.br/blog/teoria-da-inteligencia-multifocal/>
- [6] Maguire, M. J. *Music and epilepsy: A critical review*, Department of Neurology, United Kingdom. Mar, 2012.
- [7] Márcio Miranda P. - *Songs that are good for the brain* 2023. Available from: <https://www.sabra.org.br/site/musica-cerebro/>
- [8] Ratliff, Ben (6 July 2019). "João Gilberto, an Architect of Bossa Nova, Is Dead at 88". *The New York Times* (published 6 July 2019). Retrieved 7 August 2020
- [9] Daniel Neves S. - *Samba*. Accessed 2023. Available from: <https://mundoeducacao.uol.com.br/carnaval/samba-produto-morro.htm#:~:text=Uma%20composi%C3%A7%C3%A3o%20de%20samba%20utiliza,%C3%A9%20important%C3%ADssima%20para%20esse%20g%C3%AAnero>
- [10] Max Planck Institute- for human cognitive and brain sciences- *Getting in the Groove: Why samba makes everyone want to dance*. 2022. Available from: <https://www.cbs.mpg.de/why-samba-makes-everyone-want-to-dance#:~:text=Greater%20synchrony%20between%20beats%20of.Their%20secret%20is%20their%20synchronicity>