



Indonesian Journal of Community and Special Needs Education



Journal homepage: <http://ejournal.upi.edu/index.php/IJCSNE/>

Introducing Music and Movement-Based Self-Therapy for Children with Cerebral Palsy During the Covid-19 Pandemic

Zayinna Syarifatunnisaa, Alliya Tsabita Zahra, Indy Ratna Pratiwi, Lathifah Indah Nurazizah, Rika Aprilia
Budiman, Leli Kurniawati*

Universitas Pendidikan Indonesia, Indonesia

*Correspondence: E-mail: leli.kurniawati@upi.edu

ABSTRACT

This study aims to socialize an independent therapy program for parents of children with cerebral palsy. Self-therapy can be done at home using simple tools. In practice, this research conducts training through workshops and webinars. The workshops and webinars discussed the implementation of self-therapy and the use of maracas as a simple therapeutic tool. The method used is a qualitative method with a descriptive qualitative approach. The results of this study were reviewed from discussion data and interviews with the management and chairman of the Ramah Cerebral Palsy Bogor Foundation, that music-based self-therapy is easy to apply during a pandemic. Based on the research that has been done, music, motion, and song therapy are an effort to stimulate the development of motor aspects in children with cerebral palsy. This independent therapy based on music, motion, and song needs to be applied consistently to reduce wilting and stiffness in children.

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ARTICLE INFO

Article History:

Submitted/Received 06 May 2022

First revised 16 Jun 2022

Accepted 27 Aug 2022

First available online 29 Aug 2022

Publication date 01 Mar 2023

Keyword:

Cerebral palsy,
Maracas,
Motion,
Music,
Pandemic,
Self-therapy,
Song.

1. INTRODUCTION

The Covid-19 pandemic has had many impacts on life, both on the economy, education, and other daily activities. This also affects therapy for children with special needs for cerebral palsy. This condition requires all activities to be postponed. One solution to overcome this is to do simple self-therapy based on music, motion, and songs, which the author socializes to parents of children with cerebral palsy. Cerebral Palsy is a movement and posture disorder caused by damage to the immature brain and a progressive lack of development. Cerebral palsy is also known as brain injury. Brain injury is a condition that affects the control of the motor system due to lesions in the brain or neuromuscular disease caused by developmental disorders or damage to parts of the brain (Setiawan, 2021). Other causes of cerebral palsy are infections caused by viruses and parasites *Toxoplasma Gondii*, Rubella, Cytomegalovirus, and Herpes simplex virus. Children with cerebral palsy are highly recommended for therapy; by doing therapy, the disturbances experienced can be reduced. Physiotherapy is one of the therapies carried out on children with cerebral palsy using a physical approach to maintain, restore physical, psychological, and social well-being in all environments around children including parenting patterns and the length of the therapy process (Probawati & Saing, 2015).

The main program of therapy is posture training to correct poor posture. Other problems that require pediatric therapy are a limited range of motion in the joints and decreased muscle strength. In addition, physical therapy in physiotherapy serves to relieve cramps, increase joint range of motion, and strengthen muscle strength. Physiotherapy actions performed by the therapist in children with cerebral palsy are suppressing stiffness, stretching the legs, arm therapy, activating the trunk while sitting, and activating dynamic muscle stability.

The treatment given by the therapist to children with cerebral palsy is different, according to the type of cerebral palsy in children. The therapy must be able to affect the child's development, both in terms of cognitive, motor, and social. In Indonesia, there has been a significant improvement in the quality of life in children with cerebral palsy who have undergone physiotherapy for 10 months. This proves that physiotherapy is very important to do (Probawati & Saing, 2019). However, with the pandemic, therapeutic activities carried out by members of Ramah Cerebral Palsy Bogor have been delayed. So that therapy activities are diverted to be carried out at home. Based on research conducted by Anindita and Apsari (2019), it is stated that parents who have children with cerebral palsy are more likely to experience different stresses. Good emotional regulation will affect the stress level of parenting children with cerebral palsy. Ikasari and Kristiana (2018) in their research show that there are differences in the level of stress experienced by a mother, namely 42% of mothers have a very low level of parenting stress, 54% of mothers have a low level of parenting stress, and 4% have a high level of parenting stress. Lestari et al., (2018) ranked the level of needs of parents of children with cerebral palsy, starting from the highest to the lowest. Mothers need 71 of information and professional support, 64.5 of community service, 38.7 of explaining to others, 22.6 of financial need, 16.1 of child care, and 12.9% of family/ social support. The

father's needs from the highest to the lowest 71 of information, 64.5 of community services, 61 of professional support, 45.2 of explaining to others, 29 of financial needs, 22.6 of child care, and 19.4% of family / social support. All these needs must be obtained by parents of children with cerebral palsy, so that they get a good understanding of parenting, and become more active in taking treatment (Pradipta & Andajani, 2017).

Since the pandemic, all activities for children with cerebral palsy can only be done at home. One form of therapy that can be done by parents independently is with music, movement, and songs. The purpose of this study is to socialize the self-therapy program using simple musical instruments to parents, who are members of the Ramah Cerebral Palsy Bogor. In addition, the authors conduct the training in the form of workshops and webinars which discuss the implementation of independent therapy using maracas musical instruments. The novelties in this study are ⁽ⁱ⁾ independent music, movement and song therapy using the maracas musical instrument for children with cerebral palsy do not yet exist; ⁽ⁱⁱ⁾ The maracas musical instrument can actively involve the children with cerebral palsy to play music so that their motor skills can be stimulated properly.

2. THEORY

Cerebral palsy is a condition that affects the control of the motor system as a result of lesions in the brain or a neuromuscular disease caused by developmental disorders or partial damage to the brain associated with control of motor function. Cerebral palsy is not a life-threatening disease, but rather a motor disorder. The causative factors of cerebral palsy consist of the obstetrician factor (prenatal), the birth factor (natal), and the after-birth (postnatal) factor. In addition, cerebral palsy can be classified based on neurological symptoms and clinical signs.

The classification of cerebral palsy physiology is divided into two types, namely the pyramidal type and the extrapyramidal type. Pyramidal type means that there is damage to the motor area in the cerebral cortex. Pyramidal type there is a spastic type, while the extrapyramidal types there are types of athetoid, ataxia, and dystonia (Apriani, 2018).

- (i) Spastic cerebral palsy. Children belong to the type of spastic if they have difficulty in using the muscles to move, which is caused by muscle spasms then resulting in limited and late body movements. And when the child is given a stimulus, then his muscles will contract oppositely. For example, if the child's hand bends upwards, then given a stimulus to straighten forward, then the child's hand contracts still bend it upwards so that it becomes very stiff.
- (ii) Cerebral Palsy Athetoid. Children belong to the athetoid type when performing fixed and repetitive movements. The movement is not uncoordinated in the members of the movement, nor is there a spasm. Muscles can be moved easily but their repetitive movements cannot be prevented.
- (iii) Cerebral Palsy Ataxia. Children belong to the type of Ataxia if they have difficulty in fine and gross motor. Then the child has other difficulties related to balance, so that when walking will fall, fall, and stagger.
- (iv) Cerebral Palsy Dystonia occurs due to brain damage in the *celebre cortex* and the *basallia gang*.

The classification of cerebral palsy functionally groups individuals based on abilities that are still possessed according to their age. This classification is called The Gross Motor Function Classification System (GMFCS). The GMFCS classification groups individuals with cerebral palsy into five categories, ranging from the most capable (level I) to the least able (level V). This classification is an appropriate and stable method of classification and prediction of motor functions for children under the age of 12 to 18 years. We classify cerebral palsy into 5 categories (Apriani, 2018):

- (i) Level I: walking unimpeded, there are limitations to more complicated gross motor movements.
- (ii) Level II: walking without aids, there are limitations when walking outdoors, and in community environments
- (iii) Level III: walking with mobility aids, there are limitations when walking outdoors and in community environments.
- (iv) Level IV: limited self-moving ability, it is necessary to use sophisticated aids to walk outdoors and in community environments.
- (v) Level V: the ability to move alone is very limited, even if it already uses sophisticated tools.

There are four criteria for being able to create the correct pattern of motion based on the factors of speed, rhythm, and force. Points to note are: (i) Moving with speed, rhythm, and style; (ii) Move with rhythm; (iii) Move with rhythm-song; (iv) Move in a bonded and free force. In addition to parents of cerebral palsy children can understand the pattern of movement; they also need to get social support and education about the treatment and care of cerebral palsy children starting from the family environment, because the family is the most important element in helping self-acceptance (Winarsih et al., 2020).

Based on the above exposure, music, motion, and song-based therapy programs by utilizing maracas musical instruments as support for therapy. This program is here to provide information about cerebral palsy, to make it easier for parents to educate, care for, accept themselves and perform therapy independently at home. With hope, these activities can increase the stimulus of people with cerebral palsy periodically.

3. METHODS

The method used in this research is qualitative with a descriptive type of qualitative research. The subjects were the parents of cerebral palsy children, members, and leaders of Ramah Cerebral Palsy Bogor. Data collection is taken through interviews. Respondents in this study were parents of 40 people with Ramah Cerebral Palsy Bogor members. But the representative of the online interview amounted to 3 people, consisting 1 of a parent of cerebral palsy children, 1 of chairman, and 1 of an administrator of the Ramah Cerebral Palsy Bogor foundation. In addition to partners, this study also uses the public education method, to increase understanding and awareness of the general public about cerebral palsy. This study was conducted to know the effectiveness of the implementation of independent therapy based on music, motion, and song in children with cerebral palsy in the pandemic period.

4. RESULTS AND DISCUSSION

Therapy for children with cerebral palsy needs to be done regularly so that their physical motor can be stimulated properly. Brain paralysis experienced by children with cerebral palsy can affect the position of the child as well as the motor and physical abilities of the child. This can happen before giving birth, during pregnancy, or after giving birth (Hidahyani & Sujarwanto, 2021). During the pandemic, all activities are carried out at home, including therapeutic activities for children with cerebral palsy. However, the lack of education for parents and the limitations of supporting tools make the therapy ineffective. The solution that parents can use to do self-therapy is to use music, movement, and songs. Based on these problems, it is necessary to conduct socialization related to independent therapy based on music, motion, and songs to bridge the needs of parents and children with cerebral palsy in carrying out independent therapy at home.

Socialization of independent therapy based on music, motion, and song aims to provide knowledge and understanding of parents of cerebral palsy children to meet the main needs of their children in undergoing therapy independently at home during the pandemic. Music, motion, and song-based therapy are considered important for children with special needs because by using music, motion, and songs, children will enjoy the therapy process and are expected to stretch the muscles in cerebral palsy children. One of the reasons for the importance of utilizing music, motion, and song is that it can be used as entertainment and provide pleasure to children so that children can explore themselves, stimulate their motor and foster self-confidence and gratitude (Alhakiki & Desyandri, 2019). Music, motion, and song-based therapies used by us are to utilize simple maracas that have very affordable economic value as well as tools and materials that are easy to find.

Based on data obtained from discussions and interviews with one of the trustees of Ramah Cerebral Palsy Bogor Foundation, it was found that music-based therapy activities before the pandemic period were one of the programs carried out in a series of therapies at Ramah Cerebral Palsy Bogor. Here are the results of the interview:

“Before the pandemic, therapy using music and motion methods was often done in our children (cerebral palsy) by calling therapists who are experts in their fields. But not all parents can bring their children to do therapy because the majority of parents are in the lower middle economic category. Because of the pandemic, therapy becomes slightly hampered, because there should be no crowd.”

In the results of the interview above, we see that before the pandemic, a series of music-based therapy activities involved therapists who were experts in their fields. However, during the pandemic, because it was not possible to do therapy directly, we used music, motion, and song therapy using maracas. In addition to socializing therapy programs based on music, motion, and songs, we also take advantage of the use of Whatsapp groups to facilitate the implementation of socialization and independent therapy at home for children with cerebral palsy. Apart from one of these members, another informant as the chairman of the Ramah Cerebral Palsy Bogor Foundation also has the same opinion. Here are the results of the interview:

“Yes, before the pandemic indeed we often do therapy in the form of physiotherapy, including therapy using music and motion by calling a therapist. Before the pandemic, the therapy went smoothly, but after the pandemic, therapy became hampered and children (cerebral palsy) also became unstimulated motor physical aspects and other aspects.”

The above statement has confirmed the answer of what had been conveyed by the first informant. We found that before the pandemic, therapy using musical methods, motion, and songs was often performed. But after a pandemic, therapy becomes hampered so there needs to be a solution in therapy with musical, motion, and song methods during the pandemic. From the results of research that has been done by us it can be concluded that before the pandemic, therapeutic activities using music, motion, and song have been applied. But with the pandemic, these activities become hampered. Therefore, self-therapy programs for children with cerebral palsy based on music, motion, and song can be used as a solution because they use simple equipment.

The early stages of activities are begun by socializing and educating parents of cerebral palsy children to continue to stimulate the physical aspects of the motor in their children. Further activities are carried out training in the form of workshops and webinars that discuss related to the implementation of self-therapy using maracas. Maracas musical instruments are considered to be used to attract children's attention to be more enthusiastic in following activities and stages of therapy, which then when the child cerebral palsy follows the stages of therapy well, his motor will be stimulated well (Hermawan, 2013). Based on workshop training and webinars given to parents of cerebral palsy children, it was found that music, motion, and song can help cerebral palsy children to stimulate their motor aspects. This is evidenced by the ability of children when following simple movements in accordance with the beat of the rhythm. Children can hold simple maracas made by their parents. Based on the results of a study conducted with one of the parents of cerebral palsy children, it was obtained that music-based independent therapy activities using maracas, can stimulate motor development. Here's the original from the interview:

“The pandemic caused me as a parent a little difficulty to stimulate the motor aspects of my child. I don't know what kind of therapy can be applied at home. But with socialization introducing music, motion, and song therapy using maracas, my son's motor development is quite stimulated without having to use equipment that needs to be purchased at a fairly expensive cost.”

In the results of the above interview, we can conclude that self-therapy based on music, motion, and song using maracas, is very effective to apply at home only. In addition to simple maracas therapy tools that are not expensive, music therapy, motion, and song stimulate the motoric development of cerebral palsy children.

5. CONCLUSION

Self-therapy based on music, motion, and song is a self-contained therapy that can be applied by children with cerebral palsy at home. This is because the therapy process is easy to do and the therapeutic support tool by using simple maracas also helps parents to do

independent therapy on their children. Music, motion, and song-based therapy can make children with cerebral palsy become entertained and happy so that the implementation of therapy can run effectively and efficiently without the pressure of the child's cerebral palsy.

6. ACKNOWLEDGMENT

We would like thank to Universitas Pendidikan Indonesia and the lecturers who have been willing to guide and provide support in this activity. In addition, we also thank Rumah Cerebral Palsy Bogor for being willing to be the subject of our research and helping us, so that our article can be completed. We does not forget to thank Kantor Jurnal dan Publikasi of Universitas Pendidikan Indonesia for supporting this publication.

7. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

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