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RISING A STAR WITH JAIPONG DANCE IN CEREBRAL PALSY: A CASE REPORT

Sungkar E[1*] and Mellavenia[2]

[1]*Department of Physical medicine and Rehabilitation, Hasan Sadikin Academic Hospital, Padjajaran University, Bandung, Indonesia*
[2] *Department of Health Services, Sekadau, Indonesia*

Abstract: Cerebral palsy is a disorder that results in abnormal posture and movement, caused by non-progressive damage to the developing brain. Movement disorders that can be seen include spasticity, flaccidity, impaired coordination and balance. Permanent abnormalities in cerebral palsy are not progressive, but can undergo changes with age and the growth process. Therefore, the role of a physiatrist is to bring these changes towards benefits. As a physiatrist, providing therapy for cerebral palsy to transcend their limitations to be able to perform activity and participation well in life is essential. One of the recommended therapies for person with cerebral palsy is full-body movement exercises, such as dance therapy. Dance therapy can be an option with many benefits to help person with cerebral palsy cope with their disability, as well as a source of recreation and social activity. Dance skills can increase self-confidence while improving the function of limbs. One of Indonesia's traditional cultural dances is the Jaipong dance, which originated in West Java, Indonesia. Jaipong dance performances require good coordination between dance movements and music to produce the beauty and elegance of traditional cultural dance. The application of dance therapy in the form of Jaipong dance for cerebral palsy aims to improve motor function, balance, walking patterns, and cardiovascular capacity, with the ultimate goal of helping person's participation in society. In conclusion, the application of Jaipong dance intervention as dance therapy for cerebral palsy can provide many benefits as well as rising a new star as an effort to preserve traditional Indonesian culture, regardless of one's disability status.

Keywords: cerebral palsy, dance therapy, rehabilitation

Introduction

Cerebral palsy is a group of permanent disorders caused by damage of the developing brain. The developing brain or can also be referred to as the immature brain is when the start of conception, prenatal, antenatal, until postnatal (2 years old). Permanent disorders in cerebral palsy are non-progressive, but can undergo changes with age and the growth process. The main abnormalities that occur in cerebral palsy are postural and movement disorders (Sadowska *et al.*, 2020). Posture and movement disorders are often accompanied by coordination, balance, sensory, cognitive, communication and behavioral disorders. Due to the multidimensional nature of this case, the activities and participation of people with cerebral palsy will certainly experience limitations (Machado *et al.*, 2023).

Cerebral palsy is one of the most common causes of disability in children. The global incidence rate is 2-3 per 1000 live births, while in Indonesia it is 2-5 per 1000 live births (Nurfadilla *et al.*, 2018). The incidence of cerebral palsy is affected by all problems or disorders that interfere with the process of brain development, such as prematurity, difficult labor, neonatal hypoxia, etc. Prenatal risk factors account for 75% of the overall incidence of cerebral palsy, compared to the neonatal or infant period

*Corresponding Author's Email: *ellyana@unpad.ac.id*

(Sadowska *et al.*, 2020). The high incidence of cerebral palsy risks increasing the number of disabilities, therefore adequate and comprehensive treatment is needed to overcome the limitations experienced by cerebral palsy.

Cerebral palsy patients require treatment from the field of medical rehabilitation to overcome the problem of limitations in activity and participation. The rehabilitation program prescribed is tailored to the condition and needs of each patient to maximize their function and reduce disability. World Health Organization (WHO) established a concept model to be the main reference in order to improve a person's functional capacity, namely International Classification of Functioning, Disability and Health (ICF) (Stucki, 2021). Based on the ICF perspective, it is not only focused on a disease or organ system disorder, but also looks at influencing factors such as personal factors and environmental factors, all of which are interrelated in a person's function in activities and participation. The ICF conceptual framework is the core framework for developing a comprehensive and adequate patient management strategy (Stucki & Melvin, 2007).

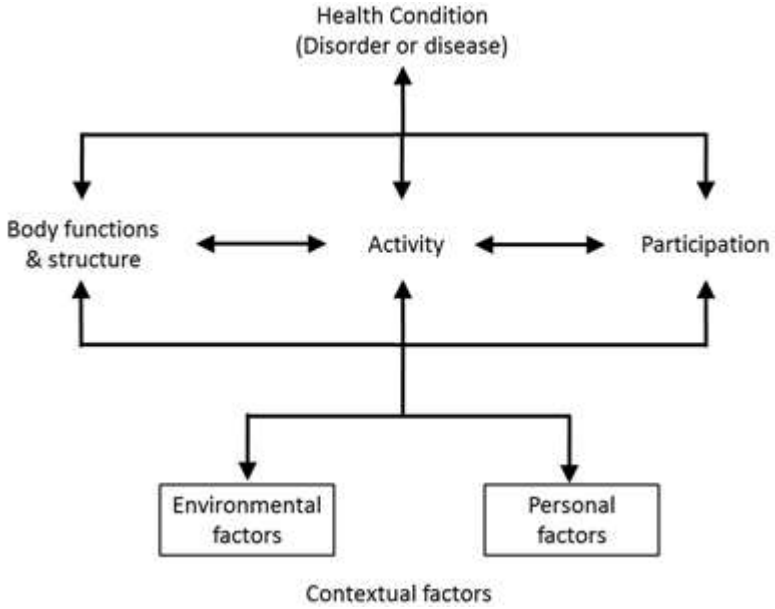

Figure 1: International Classification of Functioning, Disability and Health (ICF) Chart

Multidimensional therapy is crucial for addressing the complex needs of cerebral palsy, with full-body exercises tailored to individual abilities. Dance therapy, an enjoyable and recreational approach, has demonstrated positive effects on neurological conditions like cerebral palsy and Down syndrome. Its engaging nature enhances patient adherence and enthusiasm for long-term therapy (Cherriere *et al.*, 2020). Dance therapy integrates dance movements, art, and music, offering both physical and cognitive benefits. It engages the entire body while stimulating sensory and cognitive functions through the rhythmic combination of movement and music. Music enhances auditory function, while dance improves motor synchronization, coordination, balance, and gait. Additionally, dance supports cardiorespiratory health by increasing stamina and capacity. Beyond improving body structure and function, it also enhances activity, participation, physical fitness, and social interaction, all while serving as an enjoyable and recreational activity (López-Ortiz *et al.*, 2019).

The application of dance therapy using traditional dance can be done as an effort to preserve Indonesian art and culture. One of the many types of art and culture in Indonesia is dance, for example, like Jaipong dance from West Java (Feta & Fitria, 2022). Jaipong dance consists of a variety of movements that are performed gracefully to enhance its aesthetic value (Nugraheni *et al.*, 2021). These movements require good muscle strength, flexibility, and balance so regular practice is needed to create motor neuron patterns in the nervous system (Machado *et al.*, 2023).

Case

Miss W, 32 years old, diagnosed with diplegic cerebral palsy since age 3. The patient was first brought to see a doctor when the parents realized that their child could not sit up and could not talk like her peers at the age of 3 years. The patient is the first of 3 children, never had seizures, no prior history of illness, good antenatal care, no abnormalities during pregnancy, and no family history of disease. Further history taking revealed several risk factors, including prematurity, prolonged labor, and fetal distress syndrome. Physical examination found impaired posture and movement accompanied by muscle stiffness, lack of coordination and balance.

The patient was born at 8 months of gestation in a breech position. Initially the patient's mother had begun to feel contraction like she was about to give birth, then she checked with the midwife. When examined at the midwife, it was diagnosed that the baby was breech and the labor process was about to begin, so the amniotic sac was broken by the midwife and referred for delivery at a hospital. When at the hospital, labor is still going on for quite a while and the amniotic fluid continues to come out until it is almost dry. Eventually baby W was born with fetal distress syndrome and did not cry spontaneously. Immediate resuscitation measures were taken but there was no crying, no breathing, and a weak pulse. Until when the family was resigned to giving up, suddenly there was a very soft whimpering sound. Afterward, she was admitted to the Neonatal Intensive Care Unit (NICU) for 2 months. During her stay in the NICU, baby W received expressed breast milk and formula. Her condition is slowly improving but she is still weak and can only whimper. Judging from the condition, the doctor educates the family and predicts that there will be developmental delays in the baby.

After being diagnosed with cerebral palsy, patients are advised to follow a rehabilitation program of physiotherapy and speech therapy. Rehabilitation program is carried out 2x/week which consists of muscle strengthening exercises, stretching, posture improvement, and speech therapy. Although the progress was slow, slowly the patient's condition began to improve. For Activity Daily Living (ADLs) the patient is still dependent. Mobilization using a wheelchair or being carried. Feeding, bathing, grooming, and toileting must be assisted. Bowel and bladder continence.

Finally at the age of 5 years the patient was able to sit independently and could speak sentence by sentence. The patient is advised to go to a special school so that she can get an education that is suitable for her disability. The patient started primary school at age 5 and finished high school at age 18. The patient can follow school lessons well, can read and write, but has some difficulty with arithmetic. Although there is a delay when compared to normal children of the same age, the patient is still within normal limits when compared to his peers in special schools. The patient can complete her schooling well and on time.

The patient has no activities to do after graduating from school, basically her life is sedentary. Whereas previously when she was still in school, she was very active in participating in school activities and had a lot of work to do. Because there is no activity that she can do, she becomes bored, moody and irritable. Therefore, her parents enrolled her into a cerebral palsy community. The community did provide her with more activities and social interactions, but she was still not satisfied and wanted to do other activities. She tried various activities such as painting, singing, sculpting, etc. but none were suitable for her.

One day she told her mother that she wanted to learn to dance. It took a long time to find a dance teacher who was willing to accept students with cerebral palsy. Many dance studios refused because of her disability, but she never gave up. Her mother suddenly remembered that there was a Jaipong dance teacher at the elementary school so she tried to ask him to come to the house and train her daughter to dance. The teacher does not promise to teach immediately, he wants to see the patient's condition first and then make a decision. He was surprised to see that his prospective student was a cerebral palsy sufferer and used a wheelchair. However, he did not immediately reject it and offered to try simple exercises a few times first and if the progress was good then he was willing to become her dance teacher. After a few practices, it seemed that miss W was very eager to practice and never gave up. The teacher appreciated her fighting spirit and was willing to train her to dance.

The beginning of practicing Jaipong dance was in 2015 when Miss W was 24 years old. Dance practice is done at Miss W's house, 2x/week for approximately 3 hours. Dance training is not easy, she often has blisters and swelling on both knees due to friction while dancing. If the condition is like this, training is usually postponed first until the wound heals and is not swollen. She usually used compresses with warm water for several days to relieve the swelling. She didn't give up and was still eager to practice dancing even though her leg was injured. She couldn't wait for the next dance practice schedule.

These dance exercises began to pay off after 1 year of practicing. She has started to be good at dancing Jaipong and can master 1 song in about 1 year. She is starting to be recognized by many people. Offers to perform as a Jaipong dancer began to increase, ranging from filling in at small events, celebrations, local-national events, and even become a guest star on tv channels. In a year she can perform up to 10 events and to date has performed more than 50 events.

Jaipong dancing has changed miss W's life to be more active, interact more socially, and participate in various activities. She who initially used a wheelchair, now can walk independently using her knees. Her body used to be stiff, but is now much more flexible and her muscle strength has increased. Body movements that were once undirected become more purposeful, manageable, balance and coordination improved. Posture that was previously unable to stand upright, can now be upright on the head, neck and back. The patient's mood is also better and she is most happy every time she gets applause after finishing a performance. Improvements were also seen in the patient's ADL. She can now eat, bathe, dress up and use toilet independently. Although the patient was able to walk independently using her knees, but to walk outside the house or climb stairs, she still used a wheelchair or being carried. Overall aspects of her life have improved because of Jaipong dancing, as well as her quality of life.

Discussion

Based on the case report, a conceptual framework can be constructed using the International Classification of Functioning, Disability, and Health (ICF) model to comprehensively address Miss W's condition. The primary health issue, cerebral palsy, results in structural and functional impairments, including posture abnormalities, movement disorders, and poor coordination. These impairments create significant limitations in Miss W's ability to perform daily activities and participate fully in social and community life. From an ICF perspective, these limitations are not solely defined by her medical condition but also influenced by various contextual factors, which include both personal and environmental elements.

In Miss W's case, the personal factors contributing positively to her rehabilitation include her intrinsic motivation, interest, and determination to engage in activities that improve her function. These qualities are critical in driving her commitment to therapy and maximizing the potential benefits of rehabilitation. On the environmental side, the strong support system provided by her parents and family plays an equally vital role. This support includes emotional encouragement, assistance with daily tasks, and creating an environment conducive to participation in therapeutic and recreational activities.

By considering the interaction between these factors, the ICF framework allows for a more holistic understanding of Miss W's condition. This approach not only emphasizes the importance of addressing physical impairments but also highlights the significance of fostering supportive environments and leveraging personal strengths to enhance functional capacity, activity levels, and participation. The integration of these elements into a patient-centered rehabilitation plan can lead to better long-term outcomes and improved quality of life for individuals like Miss W.

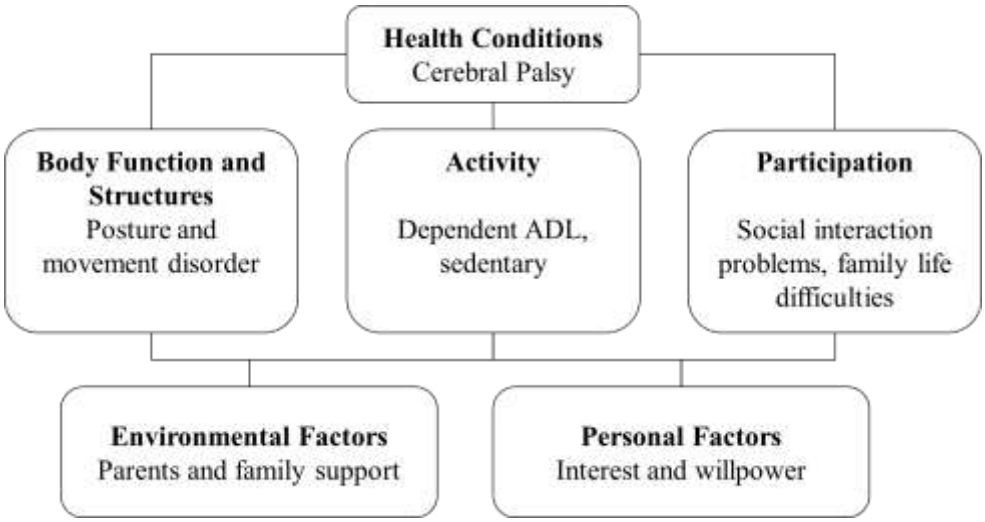

Figure 2: Patient's ICF Chart before Jaipong dance intervention

The patient's health condition has shown remarkable improvement following the introduction of the Jaipong dance intervention. This dance therapy, which combines rhythmic movement with cultural expression, has facilitated substantial progress in various aspects of the patient's health, particularly in body structure and function. One of the most significant improvements observed is in the patient's

posture and movement, areas that were previously impaired due to the primary condition. Through the structured and repetitive nature of the dance movements, the patient has regained better coordination, balance, and motor control, which directly contributed to enhancing their overall physical stability and function.

Furthermore, the Jaipong dance intervention has enabled the patient to become more active and independent in daily life activities (ADLs). Tasks that were once challenging, such as dressing, eating, and moving around, have become easier for the patient due to improved physical capabilities. The increased independence in ADLs has contributed to a greater sense of autonomy and empowerment, allowing the patient to take control of their personal care and engage more actively in their daily routine. This autonomy also plays a crucial role in enhancing the patient's self-esteem and confidence, as they experience the satisfaction of managing daily tasks with minimal assistance.

In addition to the improvements in physical function and independence, the patient has also seen a notable increase in participation in social and community activities. Engaging in Jaipong dance has not only been a therapeutic experience but also a platform for the patient to interact with others and become part of a group, which has contributed positively to their social inclusion. The act of becoming a Jaipong dancer has opened opportunities for the patient to connect with peers, participate in cultural events, and experience a sense of belonging within a community. These interactions provide not only social support but also motivation for the patient to continue their rehabilitation process.

Overall, the introduction of Jaipong dance as a therapeutic intervention has had a profound impact on the patient's physical, functional, and social outcomes. By integrating cultural and recreational elements into rehabilitation, the patient has experienced improvements that go beyond mere physical recovery. The therapy has fostered greater independence, increased participation, and a deeper sense of fulfillment, demonstrating the multifaceted benefits of dance therapy in the rehabilitation of individuals with movement disorders such as cerebral palsy. This holistic approach not only addresses physical impairments but also promotes emotional well-being, social engagement, and overall quality of life.

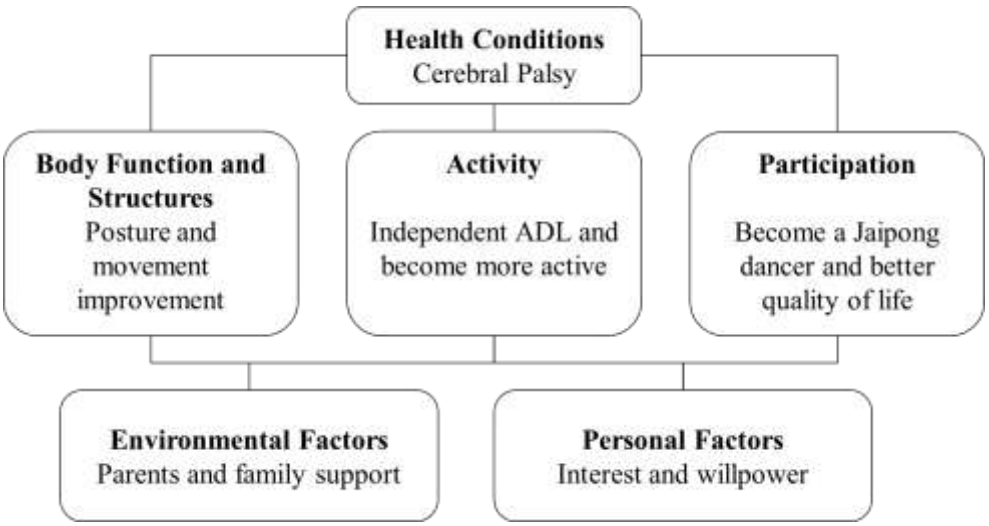

Figure 3: Patient's ICF Chart after Jaipong dance intervention

Dance is a manifestation of beauty that contains messages to be conveyed to the audience through a combination of movement with musical accompaniment. The importance of realizing the harmony and compatibility of dance movements and music is what gives meaning to a dance. A good dancer must be able to convey the meaning of the dance to the audience. To realize it requires harmony between coordination of body movements, beauty, rhythm, tempo, and energy (Istiqomah, 2019).

Dance therapy has been shown to have a positive impact on neurological cases such as cerebral palsy, Down syndrome, etc. Dancing generates a lot of sensory stimulation such as visual, auditory, and tactile. Each of these sensory stimulations will result in different neurologic adaptations (Cherriere *et al.*, 2020). Dance stimulates the formation of an integrated nervous system responsible for the experience of motor and sensory activities. Continuous stimulation of nerves and motor functions will form a useful pattern for the application of coordination and proper execution between dance movements and music (Machado *et al.*, 2023). Dance therapy can take place as a fun physical and occupational therapy to motivate and increase participation. Dancing can aid emotional expression, facilitate well-being and self-confidence (López-Ortiz *et al.*, 2019). Dancing helps improve physical ability and cognitive function, as well as emotional well-being and social interaction. Upper limb movement, mobility and balance when walking or standing also appear to improve (Cherriere *et al.*, 2020).

Based on the benefits mentioned, dance therapy through Jaipong dance intervention was performed on this patient. Jaipong dance is one of the traditional Indonesian dances originating from West Java, which is a heritage of Indonesian art and culture. Jaipong dance was created in the 1975 by dance artists named H. Suanda and Gugum Gumbira. Jaipong dance is usually performed on important occasions, such as welcoming guests, state events, and other events (Umam, 2023). Jaipong is a type of dance that is dynamic, energetic, and fast-paced, but still upholds aesthetic values and beauty (Mulyadi, 2023). Jaipong dance performances are usually accompanied by Sundanese *Gamelan* instruments and the singing of a *Sinden*. Jaipong dancers usually wear a special dance outfit consisting of *Apok*, *Kabaya*, and *Sinjang* that show the distinctive beauty and sensuality of Sundanese women (Nugraheni *et al.*, 2021).

Jaipong dance is synonymous with the characteristics of Sundanese women who are resilient, simple, cheerful, and vibrant. There are three elements in realizing the characteristics of the Sundanese woman which are referred as 3G *(Geol, Gitek,* and *Goyang)*. *Geol* is a movement that focuses on the hips, *Gitek* is a hip swing movement accompanied by stomping, while *Goyang* is only a hip swing without stomping (Umam, 2023).

Jaipong dancers must remember the three basic aspects of aesthetics in Jaipong dance, namely *Luwes, Kewes,* and *Pantes*. *Luwes* means the ability of dancers to apply choreography by upholding the values of a series of dance movements *(Wiraga)*, compatibility with rhythm *(Wirama)*, and the ability to express the meaning of dance *(Wirasa)*. *Kewes* is the ability of a dancer to bring a dance to life where the organization of energy, tempo, and space processing are very influential. Lastly, *Pantes* is the charm (expression) exuded by the dancer in accordance with the characteristics of the dance she is performing (Ramlan, 2016).

Four movement patterns in Jaipong dance, namely *Bukaan, Pancungan, Ngala,* and *Mincit*. *Bukaan* is the opening movement that signifies the performance will begin, characterized by rotating movements while playing the shawl around the dancer's neck. *Pancungan* is a fast movement while accompanied by music. *Ngala* is a broken dance movement performed at a fast tempo. Lastly, *Mincit* is the movement between one variety of movement and another, usually done after *Ngala* (Kementerian Pariwisata dan Ekonomi Kreatif, 2023).

From the four movement patterns above, several movements are formed that are performed in the Jaipong dance, such as (Umam, 2023)

1. *Gerakan Cingeus* is a combination of flexible head and body movements, requiring good coordination and flexibility to match head and body movements with harmony.

2. *Gerakan kaki* such as *Minced, Depok,* and *Sonteng* to do so requires the strength of the lower limbs, especially the agile legs and knees.

3. *Gerakan Meliuk* is a full-body twisting motion following the tempo of the music so that full-body flexibility is needed.

4. *Gerakan Ngagaleong* emphasizes eye movements and a sharp gaze. Control of eye movements to focus on a single point and give meaning to the gaze.

5. *Gerakan variasi* is a mix of fast and slow movements adapted to the tempo of the music. Sensorimotor coordination and memory play an important role in this movement.

Although Jaipong dance is a fairly simple type of dance, it certainly takes time and perseverance for normal people to learn it, let alone people with cerebral palsy. People with cerebral palsy take longer to learn things, from simple movements to more complex ones. She has to practice repeatedly to remember 1 movement. When moving on to the next movement, the previous movement is still repeated briefly so as not to forget. Repeated practice can create neuromotor patterns that will be

remembered by the body. Therefore, in miss W's case, it took her about 1 year to learn 1 song complete with dance.

Performing Jaipong dance requires good muscle strength, sensorimotor control, coordination, balance, flexibility, stamina, and memory. If these aspects are not fulfilled properly, it will become an obstacle in performing. By practicing then slowly stamina will increase through increased cardiovascular capacity, muscle strength will increase, coordination and body control will improve due to the formation of neuromotor patterns, that way the balance of the body can be maintained. With the many variations of movement in all directions that are carried out, flexibility will increase.

The benefits of Jaipong dance intervention are not only limited to practicing dance skills, but also in aspects of daily life. The patient was initially categorized as dependent in performing ADLs, but after improving the aspects mentioned above, her ADL skills have also improved to become more independent. When compared to other cerebral palsy patients of the same age, the progress in this patient appears more prominent.

Overall, the patient's lifestyle is more active as she practiced dancing regularly. Participation in social life became better because many offers of performing and filling events as a Jaipong dancer made her have more contact with wider community. The patient also felt happier and more confident because she can play an active role in her lives and society, thus improving her quality of life.

Conclusion

The application of Jaipong dance intervention as dance therapy for children with cerebral palsy can provide many benefits as well as an effort to preserve traditional Indonesian art and culture, regardless of one's disability status. In this case report, it can be concluded that Jaipong dance intervention is proven to have therapeutic effects on cerebral palsy. It is even possible for someone with cerebral palsy to pursue the art of Jaipong dance and become a star.

The limitations in this study are the difficulty in finding Jaipong dance teachers who are willing to teach people with cerebral palsy, absence of dance therapy rehabilitation in health facilities, the lack of adequate facilities to channel the interests and talents of patients with cerebral palsy, and the busyness of parents or caregiver for the patient.

Recommendations from this study are expand rehabilitation programs for cerebral palsy such as dance therapy, dance therapy training for health workers, providing Jaipong dance interventions as an effort to preserve Indonesian art and culture, procurement of facilities to accommodate people with cerebral palsy. A study be conducted to examine the comparison of intervention groups given conventional therapy plus dance therapy and control groups that are only given conventional therapy so that results can be obtained to prove the benefits of giving dance therapy to cerebral palsy compared to the control group.

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Declaration of Interest Statement

The authors declare that they have no conflict of interests.

References

Cherriere, C., Robert, M., Fung, K., Tremblay Racine, F., Tallet, J., & Lemay, M. (2020). Is there evidence of benefits associated with dancing in children and adults with cerebral palsy? A scoping review. In *Disability and Rehabilitation* (Vol. 42, Issue 23, pp. 3395–3402). Taylor and Francis Ltd. https://doi.org/10.1080/09638288.2019.1590866

Feta, N. R., & Fitria. (2022). Development of Knowledge Management System fot Jaipong Dance. *Jurnal Pilar Nusa Mandiri*, *18*(2), 107–116. https://doi.org/10.33480/pilar.v18i2.2930

Istiqomah, N. (2019). The implementation of dance learning for children with cerebral palsy at SLB G Daya Ananda. *Jurnal Widia Ortodidaktika*, *8*(12), 1286–1296.

Kementerian Pariwisata dan Ekonomi Kreatif. (2023). Tari Jaipong. *Jejaring Desa Wisata*. https://jadesta.kemenparekraf.go.id/atraksi/tari_jaipong

López-Ortiz, C., Gaebler-Spira, D. J., Mckeeman, S. N., Mcnish, R. N., & Green, D. (2019). Dance and rehabilitation in cerebral palsy: a systematic search and review. In *Developmental Medicine and Child Neurology* (Vol. 61, Issue 4, pp. 393–398). Blackwell Publishing Ltd. https://doi.org/10.1111/dmcn.14064

Machado, E. D., Cole, M. H., Miller, L., McGuckian, T. B., & Wilson, P. H. (2023). The efficacy of dance interventions for the activity and participation of individuals with cerebral palsy–a systematic review and meta-analysis. *Disability and Rehabilitation*. https://doi.org/10.1080/09638288.2023.2200259

Mulyadi, T. (2023). Gugum Gumbira and the History of the Creation of Jaipongan Dance. *International Journal of Culture and History*, *10*(1), 21. https://doi.org/10.5296/ijch.v10i1.20670

Nugraheni, T., Narawati, T., & Budiman, A. (2021). Jaipong Dance: Representation of Local Culture, Popular Culture and Global Culture. *International Journal of Social Sciences and Humanities Invention*, *8*(12), 6716–6725. https://doi.org/10.18535/ijsshi/v8i12.02

Nurfadilla, H. N., Gamayani, U., & Nasution, G. T. D. (2018). *Komorbiditas pada Penyandang Cerebral Palsy (CP) di Sekolah Luar Biasa (SLB)* (Vol. 7, Issue 2).

Ramlan, L. (2016). Model Kreativitas Kepenarian dalam Jaipongan. *Jurnal Ilmiah Seni Makalangan*, 20–32.

Sadowska, M., Sarecka-Hujar, B., & Kopyta, I. (2020). Cerebral palsy: Current opinions on definition, epidemiology, risk factors, classification and treatment options. In *Neuropsychiatric Disease and Treatment* (Vol. 16, pp. 1505–1518). Dove Medical Press Ltd. https://doi.org/10.2147/NDT.S235165

Stucki, G. (2021). Advancing the Rehabilitation Sciences. *Frontiers in Rehabilitation Sciences*, *1*. https://doi.org/10.3389/fresc.2020.617749

Stucki, G., & Melvin, J. (2007). The international classification of functioning, disability and health: A unifying model for the conceptual description of physical and rehabilitation medicine. *Journal of Rehabilitation Medicine*, *39*(4), 286–292. https://doi.org/10.2340/16501977-0044

Umam. (2023). Tari Jaipong: Budaya, Sejarah, dan Asal Tari Jaipong. In *Sosial & Budaya*. Gramedia Asri Media. https://www.gramedia.com/literasi/tari-jaipong/