Engaging Seniors with Dementia through Music and Movement

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ABSTRACT

Music and movement activities are widely recognised for enhancing the well-being of patients with dementia, yet specifics regarding session content are often lacking in discussions. This paper investigates the effectiveness and suitability of content within music and movement sessions through action research employing two cycles of planning, acting, developing, and reflecting. Session content includes planning, strategies, physical movements, and music selections. A series of eight 45-minute sessions were conducted for a group of 10 to 15 dementia patients at the Alzheimer's Disease Foundation Malaysia in Petaling Jaya. This action research gathered qualitative data through participatory observations, reflective diaries, and video recordings. Findings indicate that patient engagement levels varied based on familiarity with music selections; many patients embraced children's songs regardless of age and learned new compositions. Movement options were constrained to sitting due to the patient physical condition. Lesson plan outlines evolved over sessions, offering insights and recommendations for future music and movement practitioners.

Keywords: *music and movement, seniors with dementia, action research*

INTRODUCTION

Dementia is a critical world issue that faces significant challenges in 21st century society. Studies have suggested that music can have measurable benefits on psychological and physiological outcomes for people with dementia (Lam et al. 2020), and active music engagement in a group setting with singing and music with movement can cultivate a positive attitude and a desire for social connectedness (McDermott et al. 2014). Through the investigation of the therapeutic benefits of music intervention, findings show that music significantly improves anxiety and stress management.

This action research's music and movement activities were inspired by the rhythmic movements created by Émile Jaques-Dalcroze (1865–1950). Dalcroze developed his educational method in the early twentieth century in Geneva, Switzerland. It is well-known internationally as one of the essential pedagogical approaches to teaching music to students of all ages and levels. Dalcroze Eurhythmics provides a fascinating way of educating music. It is a creative and engaging approach involving multiple senses: kinesthetic, aural, visual and tactile (Urista 2016).

This study will explore the content of Dalcroze-inspired music and movement sessions for patients with dementia through action research. The content involves planning and strategies for the sessions, considering physical movements, and selecting music for these activities. Through action research, the researcher improved and developed activities that were more engaging and suitable

for patients with dementia. Thus, this study aims to explore the effectiveness and appropriateness of the content in the music and movement sessions through action research while responding to the following research questions:

1. What are the plans and strategies for developing music and movement sessions for patients with dementia in each cycle?
2. What are the considerations in physical movements for developing music and movement sessions for patients with dementia in each cycle?
3. What are the music selections for developing music and movement sessions for patients with dementia in each cycle?

LITERATURE REVIEW

Juntunen (2020) stated that Dalcroze practice integrates rhythmic movement, improvisation, and ear training. This approach encourages musical elements to be "effectively experienced, expressed, understood and learnt through body movement" (Juntunen 2020). Dalcroze's educational approach impacted students' psychological and physical connections, increasing their sensitivity to music and body movements. He viewed eurhythmics as a personal experience intended to create a desire to communicate and express themselves within the student. He believes that eurhythmics provided a powerful means of creating a deep connection between the body and the brain (Jaques-Dalcroze [1921] 2014). The different types of activities created by Dalcroze helped his pupils achieve musical and non-musical goals through physical, mental-emotional and social interaction. An interesting study by van de Merwe and Habron (2019) highlighted the connection between Dalcroze practitioners' spiritual experiences and the theory of Dalcroze Eurhythmics.

A typical Dalcroze Eurhythmics class involves the teacher's piano improvisation, solfège and eurhythmics (Dalcroze Society of America 2023). Students react immediately through the quick changes the teacher played and instructed. These multitasking activities require high concentration, attention, flexibility, and memory. Other activities include following the musical rhythm, creating own movements, interacting with others in partner or group activities, and imitating and memorising movement sequences. Azu Farhana and Md Jais (2021) discovered that these movement exercises contributed to developing students' awareness and deepened their understanding of musical concepts and skills.

Elderly people with dementia experience deterioration in cognitive and behavioural functioning. They have limited capacities to partake in daily activities, which negatively impacts their quality of life, and many are affected by the limitation in social cohesion and emotional well-being. Previous studies have shown that meaningful engagement in activities gives intense pleasure to people with dementia (e.g., Brooker and Woolley 2007; Kolanowski et al. 2006; Perugia et al. 2018). Physical engagement provides positive stimulation to emotional and behavioural well-being.

Music listening can be used to regulate emotion and psychological well-being. Laukka (2007) indicated that the elderly in Sweden listen to music using various listening strategies for emotional regulation. Many studies have been conducted using intervention with music and movement among elderly people with dementia. Most studies have shown improvement in emotional well-being, such as depression, and cognitive abilities in terms of verbal fluency and memory. A six-week interactive music and movement activity was implemented to examine the intervention effect on agitation of people with moderate dementia in comparison to passive music listening and social chatting (Cheung et al. 2020). The findings indicated no significant statistical differences in the intervention effect among the three treatments. The overall results yielded measurable improvement in agitation and evidenced that physical engagement with music and movement activities had the most significant effect size (Cheung et al. 2020).

Singing has therapeutic benefits for the general population and positive emotional effects for the elderly. It has desirable health outcomes and physical health benefits (Clift et al. 2009), and it stimulates well-being and improves temperament and self-esteem (Davidson and Fedele 2011). Relevant studies on singing and dementia were reviewed systematically and demonstrated positive impacts, which include (1) quality of life, (2) psychological well-being, (3) cognition, (4) engagement, (5) activities of daily living, and (6) care-partner well-being. Further, the study also specified seven key themes related to the impact of singing, which include the following: (1) pragmatic elements; (2) social benefits; (3) mood; (4) identity; (5) memory; (6) flow-on effects; and (7) relationships (Thompson et al. 2021).

Several studies investigated the effectiveness of the Dalcroze approach on the elderly. One of the earliest research projects at the Geneva University Hospitals, Switzerland, showed improved balance and reduced risk of falls among older adults by doing music-based multitask training with body movement, Dalcroze Eurhythmics, for six months (Trombetti et al. 2011). The secondary analysis of the same study displayed that cognitive function was improved and anxiety was decreased among the participants (Hars et al. 2014b). The research members completed a three-year follow-up extension study and found that the participants showed significant improvement in gait and balance through this long-term music-based multitask training (Hars et al. 2014a).

The effectiveness of Dalcroze Eurhythmics was proven by two recent studies with positive results in the United States. The gait speed of the community-dwelling older people had significantly improved over a nine-week intervention (Ferguson-Stegall et al. 2017). Beaulieu et al. (2017) adopted a qualitative approach of analysing participants' feedback after a two-year pilot programme at a senior activity centre. The participants expressed enjoyment of the social interaction and activities and reported improved mobility, balance, and health after participating (Beaulieu et al. 2017).

However, studies on implementing Dalcroze activities for patients with dementia were scarce. A study revealed that it was less feasible for patients with dementia and mild cognitive impairment to practice Dalcroze activities at home (Fischbacher et al. 2020). Another paper discussed the positive outcomes of the Dalcroze rhythmic music programme for people with dementia, including balance, higher self-esteem, reduced falls, increased motor function and numerous non-verbal communication (Leners and Jacquemart 2017), but this lacked empirical research support. Furthermore, the content of the musical activities for patients with dementia has not been investigated thoroughly. This was supported by Raglio and Gianelli (2009), where the researchers claimed the need to evaluate and understand the therapeutic music process as these directly impact the results of the interventions.

METHODOLOGY

Figure 1 illustrates the action research framework, comprising four stages delineated by Mertler (2017): planning, acting, developing, and reflecting. These stages encompass nine sequential steps. The planning stage involves identifying and narrowing down a topic, gathering information, reviewing pertinent literature, and crafting a research plan. Subsequently, the acting stage entails executing the plan, collecting data, and analysing it. Researchers devise an action plan in the developing stage, incorporating revisions, adjustments, and enhancements based on data analysis. Finally, in the reflecting stage, researchers summarise the findings, disseminate them, and reflect on the research process (Mertler 2017).

This research aims to develop the appropriate content of music and movement activities for patients with dementia through the collected data from the aspects of planning, physical movement and music selections. McNiff and Lomax (2003) explained that "action researchers aim to develop educative relationships to enable all participants to learn and grow." This feature of action research supports our research objective and provides a systematic process for researchers to gain insights throughout the study.

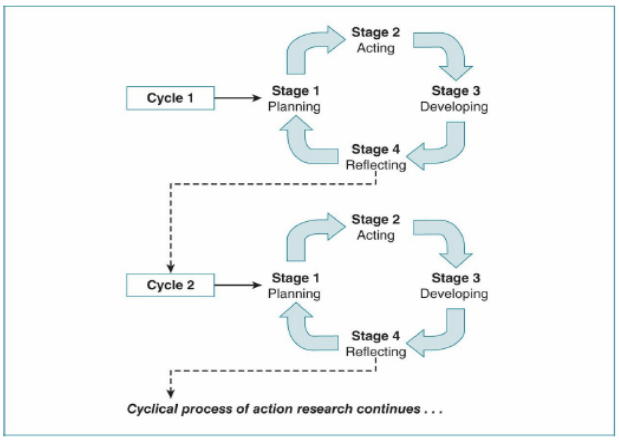

Figure 1 Process of action research.

Source: Adapted from Mertler (2017).

The music and movement activities were completed at the Alzheimer's Disease Foundation Malaysia's Day Care Centre at Petaling Jaya. There was a group of 10–15 patients with dementia ranging from mild to severe dementia conditions. Severe dementia patients were accompanied by their caregivers. All the patients with dementia were above 60 years old. The researcher visited the centre to understand the environment and conditions of the patients with dementia. This was a crucial step in gathering sufficient information to plan the first music and movement session. These sessions were conducted from March to May 2019 by the researcher who has obtained the Applied Credential in Dalcroze Education from the United States.

The action research consisted of two cycles of planning, acting, developing, and reflecting on developing suitable music and movement activities for patients with dementia. Each cycle involved four weekly music and movement sessions, with each session lasting 45 minutes. There were a total of eight music and movement sessions conducted throughout the two cycles. The research data were collected through participatory observations, reflective diaries, and video recordings.

RESULTS AND FINDINGS

Lesson Plans Overview

The researcher structured the session outline in the following sequence: greetings, warm-up, opening activity, singing, rhythmic activities, and closing activity. The session outline was developed based on the framework Tucker (2016) utilised in her music and movement sessions for seniors with dementia. The first session in this study began with a series of greetings and participant introductions, followed by a structured warm-up activity set to Edvard Grieg's "Morning." This warm-up involved gentle stretching exercises targeting various muscle groups. An opening exercise ensued, featuring an eight-count movement sequence synchronised with piano improvisation, encompassing marching, thigh tapping, hand clapping, and posing. Participants engaged in singing familiar tunes while clapping to rhythmic beats, accompanied by the instructor on piano. During unexpected music pauses, a "quick reaction" activity was added to challenge participants to freeze in a pose.

Additionally, a "follow" strategy was implemented, involving adjustments to movement speed corresponding to changes in song tempo. Further Dalcroze strategies, including the "interrupted canon" and "spin-off" techniques, were introduced throughout subsequent sessions. In the former, participants imitated rhythms and movements initiated by the instructor, while in the latter, rhythmic sections were incorporated into songs, creating an ABA musical structure. The activities conducted in each session are detailed in Table 1.

Table 1 Music and movement activities for seniors with dementia

Session	Activities
1	Greetings, warm-up, opening activity, singing, rhythmic activities (quick reaction, follow) and closing activity
2	Warm-up, opening activity, rhythmic activities (quick reaction, follow), singing (spin-off) and closing activity
3	Warm-up, opening activity, rhythmic activities (quick reaction, follow), singing (spin-off) and closing activity
4	Warm-up, opening activity, rhythmic activities (interrupted canon, quick reaction, follow), singing (spin-off) and closing activity
5	Warm-up, opening activity, rhythmic activities (quick reaction, follow), singing (spin-off) and closing activity
6	Warm-up, opening activity, memory activity, rhythmic activities (quick reaction, follow), singing (spin-off) and closing activity
7	Warm-up, memory activity, opening activity, rhythmic activities (quick reaction, follow), singing (spin-off) and closing activity
8	Warm-up, opening activity, memory activity, rhythmic activities (quick reaction, interrupted canon, follow), singing (spin-off) and closing activity

The results and findings are presented in three main sections: planning and strategies, physical movements and music selections. The cycles' planning, action and reflection stages were discussed as follows.

Planning and Strategies

Planning stage

The main structure of the sessions began with a greeting session where the facilitator greeted the participants individually. The warm-up activity involved physical movements such as neck and shoulder stretching and swaying the arms, body, and legs. These were completed in a gentle and slow speed. Graceful music, such as Edvard Grieg's "Morning" was played to encourage more relaxing movements. Following the warm-up, the session began with an opening activity, an eight-beat count sequence with four different gestures (e.g., march – tapping thigh – clapping hands – holding a shape). Next was a sing-a-long activity where the participants sang and clapped together, followed by rhythmic activities with "quick reaction." For instance, when the music stops, the participants must stop clapping. Another activity would be a "follow" activity where the participants follow the music's speed and dynamics (loud/soft). There was also a ball-passing activity where the participants were asked to pass the ball to the next person in the circle on the beat. Each session ended with a closing activity of a researcher-composed "Bye-bye Song."

Cycle 1

The ball-passing activity was implemented in the first cycle, clapping the short-short-long rhythmic pattern along with the reaction to the loud or soft music. In Session 3, signals were added to the ball-passing activity, where participants needed to respond according to the signals given. The participants needed to pass the ball in opposite directions when the signals were cued. The ball-passing activity was improved over the four sessions in the first cycle, but participants could not pass the ball on the beat consistently.

A "spin-off" activity was also introduced in the first cycle, in an ABA form activity where a familiar song was sung in A, and a short-short-long rhythmic pattern was implemented between the

songs. This activity was not successful due to the cognitive complications of the participants; it took a long time for the participants to recall and respond to the rhythmic pattern that was learned.

Reflection of Cycle 1 and plan of Cycle 2

The sessions presented all the activities planned in Cycle 1, though they were only partially successful. It was discovered through video observation that the duration of the ball-passing had exceeded the planned time due to the practice and repetition of the activity, which all the participants received well. Additionally, the engagement level of the participants decreased due to the extended time in one activity. Hence, a shorter duration was used for this activity in Cycle 2, and variations of the activity were introduced, such as passing the ball in different rhythms and gestures.

There were other new ideas and variations of the activities employed in Cycle 2 to create more interest in the participants. For example, the last movement of the eight-beat sequence changed to drawing in the air instead of holding a shape because the researcher realised that holding a shape for eight beats was hard for the participants because that creates stiffness in the body, whereas drawing in the air would promote some sense of freedom in movement. Another variation to the eight-beat sequence was to change the number of beat sequences to six, four, three, two, and one. One challenging sequence planned for Cycle 2 is the four – three – two – one sequence of movement (e.g., four marches – three tapping thighs – two tapping shoulder – one clap).

The "spin-off" activity was removed from Cycle 2 because it was too difficult for the participants to perform this fast-switching activity, which also requires good memory skills. Instead, the "spin-off" activity was replaced by a memory game in Cycle 2, where participants were asked to clap the number of beats after hearing it on the piano. This activity was much more successful than the "spin-off" activity in Cycle 1.

Several strategies were used in Cycle 2 to increase the participants' attention and engagement. For example, no additional tools were used to create interest in the participants in Cycle 1; only one ball was used for the ball-passing activity. Therefore, more tools were added to Cycle 2 to engage the participants, such as hula hoops, balls, and small hand percussion instruments. The circle formation was kept from beginning to end in Cycle 1. However, partner and small group activities were designed to change the atmosphere and energy in the room during Cycle 2.

Reflection of Cycle 2

In the eight-beat sequence, more participants could do it correctly compared to the shorter beat sequence in six, four, two, or one. The one-beat sequence was extremely difficult for them, even at a slow speed and following the researcher's movement. In addition, the four – three – two – one sequence was equally challenging to the participants due to the irregularity of the beats.

After adjusting the ball-passing activity to a shorter time, the participants responded better to the activity. The different rhythmic variations in passing the ball also helped the participants to engage, such as changing the gesture of passing the ball to the next person according to the music improvised (slow/fast), adding another ball into the passing game so that the participants have to be alert of the two balls at the same time. The short-short-long rhythmic pattern was learned in Cycle 1, and the participants were asked to pass the rhythmic pattern among their team members. Only one group could pass the rhythmic pattern smoothly out of five small groups.

The engagement level of the participants was much higher in Cycle 2; this indicates that the strategies implemented were effective. There were interactions and playfulness that did not emerge in Cycle 1. The hula hoops used in pair and small group settings were well received. The participants also enjoyed using the small hand percussion instruments for various rhythmic activities. There was a noteworthy observation where two participants could not tap the short-short-long rhythmic pattern in a big circle setting (Cycle 1) but could do it in the paired setting (Cycle 2).

Physical Movements

Planning stage

Before the first cycle, the initial planning was to prevent the participants from standing and moving around due to physical limitations. The setting of participants sat in a big circle to allow more interactions between the participants and the researcher.

Cycle 1

During the first cycle, the participants experienced tapping, marching in the same spot, clapping, holding a shape, and doing small stretches. Most participants could follow all these movements except holding shapes and stretching. Holding a shape for eight beats was challenging for some of them, and not all had the flexibility to stretch their arms high.

Cycle 2

During Cycle 2, more activities were implemented to promote their flexibility in movement, such as holding hands with friends at the side and stretching together. Another activity was using the ball to create elongated movements before passing it to their next friend. It was discovered that some participants could raise their arms higher than their movements in the first cycle.

Overall, the participants could retain some movements by either nodding their heads, clapping or tapping; they were mostly in time with the beat of the music. These findings reflected those of Lesaffre et al. (2017), who also discovered that patients with dementia could coordinate their body movements with music spontaneously. However, most participants could not follow a series of movements in the rhythmic sequences regardless of the slower beat or following the instructor. It was also difficult for them to control their movement to start or stop certain activities. Passing the ball on the beat was never successful, probably due to their cognitive abilities. Although the participants suffered from cognitive declines, it was surprising to discover that they could respond and match the speed of the music with faster and slower movements throughout the eight sessions. Adding movements to the music is more important than merely singing because this would promote more positive well-being for patients with dementia (Ray and Götell 2018).

Music Selections

The session involved several types of music: piano improvisation, classic songs, children's songs, recordings of classical repertoire, and a newly composed song by the researcher as a closing activity for each session.

The improvised music with the piano was used throughout the two cycles to guide and support the rhythmic movement activities. In the first cycle, the improvised music was more decorative and complicated. For instance, in the short-short-long rhythmic pattern activity, the left hand played this specific rhythm consistently, but the right hand was free to improvise the melody. The rhythmic pattern was unclear to the participants; some were tapping the regular beat as they listened to the music instead of the specific rhythm. Therefore, a different approach was adopted in Cycle 2, where both hands mostly played the same rhythmic pattern. This was much better received, and the participants could do the pattern more effectively.

The songs used in the eight sessions include classic, children's, folksong, and a newly composed song. The classic songs used in Cycle 1 were "Tian Mi Mi" (甜蜜蜜) by Teresa Teng, "Lemon Tree" by Fools Garden and "Rasa Sayang." The group enjoyed the song "Tian Mi Mi" well, but it was discovered that only Chinese participants were singing it due to the lyrics; other participants were clapping along with the music without singing. The participants tapped along with the song "Lemon Tree" but could not sing it because of the difficult lyrics they were unfamiliar with. Hence, both songs were removed from the activity in the second cycle. Instead, "Rasa Sayang" and "Love" by Nat King Cole were implemented in Cycle 2. However, "Love" received the least responses among

these four songs. Contrastingly, "Rasa Sayang" was the most engaging song; most participants could sing it. It was an enjoyable song to the participants probably because of the simple lyrics, familiar tune and uplifting spirit that this song stimulated them.

The children's songs were included in the second cycle, and movement activities included "London Bridge," "Row, Row, Row Your Boat" and "Hokey Pokey." It was unexpected that the participants enjoyed them and sang these songs out loud. These findings confirm that patients with dementia can respond positively with smiles and movements when they listen to familiar music (Cuddy and Duffin 2005).

A newly composed closing song was introduced in the first cycle and sung at the end of every session. The participants enjoyed this new song and could learn and sing it towards the end. This result further supports a study by Samson et al. (2009), which proved that patients with dementia could recognise new melodies for up to eight weeks if the songs were presented repetitively. This song was very engaging because of the lively character and the surprise element of the song. The researcher designed a section of this song where all participants were to give a "high-five" to the researcher individually as a goodbye act at the end of each session. This elevated the one-to-one interaction and engagement of the group as a whole.

CONCLUSION AND RECOMMENDATIONS

This action research aimed to explore the effectiveness and appropriateness of the content in the music and movement activities, from planning and strategies to physical movements and music selections. According to the findings, the researcher offers some recommendations for future practitioners for the implementation of music and movement activities:

1. To avoid excessive duration in a single activity, 10 minutes should be the maximum duration of one activity.
2. Different formations (pairs, large, and small groups) were employed to increase the engagement of the participants even though the participants were only able to sit while doing the activities.
3. To avoid stretching the arm high at the beginning of the sessions because of their physical limitations.
4. To know the targeted participants' background before selecting the appropriate music, consider the songs' language and characteristics for the activities.

It is recommended that future research delimit the participants with dementia at mild and moderate levels only to contribute to more focused and consistent findings on the content of the music and movement activities. Incorporating multiple action research cycles can facilitate the ongoing refinement and suitability of activity content. In order to advance the comprehension of the impact of Dalcroze-based approaches on seniors with dementia, interdisciplinary research in geriatrics, neurology, and music therapy is recommended. These studies would offer valuable insights into the efficacy of such interventions from diverse perspectives, enhancing our understanding of their therapeutic potential.

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