

## Full-Length Article

## Development of a Music Therapy Program for Healthy Elderly in the Community: A Pilot Evaluation on Feasibility and Acceptability

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### Abstract

Successful aging can occur through promoting physiological, psychosocial, physical, cognitive functioning, and engagement in social and productive activities. The study aims to describe the development of a group music therapy program for healthy elderly living in the community. Group music therapy was conducted for elderly above 60 years old. The intervention consisted of 4 weekly sessions which lasted one-hour each. A certified music therapist conducted all the sessions. An evaluation of the music therapy program was conducted at the end of the 4 sessions. Three music therapy groups were conducted, and 20 elderly participated. The mean age of the participants was 68.7±4.6 years (range: 60 to 76 years old). The main activity preferences were inclusive of activities involving hand chimes, hand percussion, musical bingo and lyric substitution. Participants found the one-hour session to be too short, and suggested to increase the session duration to 1.5 or 2 hours. Our music therapy program was well-received by the elderly in the community. The activities helped to increase physical activity and social engagement, which could potentially serve to reduce cognitive decline and depression. In this way, this kind of program might be usefully proposed as a routine activity within similar communities.

**Keywords:** *elderly, music therapy, psychosocial*

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### Background

Aging is a global problem as population aging is pervasive worldwide at an unprecedented rate [1]. Nevertheless, aging need not be seen as an adverse process - successful aging can occur through promoting physiological, psychosocial, physical, cognitive functioning, and engagement in social and productive activities [2].

During a music therapy session, a range of musical activities may be used by the music therapist, including singing, music games, analysis and discussion, and music-making using improvisational techniques. A systematic review on music interventions for elderly people found that active music interventions (participants actively participating in music-making) were more effective in improving general cognition than receptive music therapy (listening to music) [3]. Werner et al. [4] compared the effectiveness of group music therapy versus recreational group singing on elderly living in nursing home, and found a greater reduction in depression for those who received music therapy.

The Disengagement Theory which purported that it is natural for older adults to gradually decrease their social interactions with others [5] was used to explain the withdrawal from social activities as people age. However, this withdrawal from social activities can have a negative impact on cognitive function and memory [6]. On the contrary, social support is a mediator of loneliness and depression in elderly people [7]. Regular social interaction was associated with higher physical activity [8]. Physical activity, including low intensity physical activity such as walking, was associated with lower cognitive impairment and better physical health [9]. Hence, maintaining social activities is important in ensuring reduction in cognitive decline and improved physical health.

Depression is another major issue confronting elderly people above 60 years of age, also known as “late-life depression.” In community-dwelling elderly, 5% present with major depressive disorder, and a review on studies in late-life depression on people in the United States (US) estimated that 8 to 16% have clinically significant depressive symptoms [10]. Depression affects cognitive and results neurologic abnormalities, including deficits on neuropsychological tests and greater-than-normal age-related changes on neuroimaging, resulting in higher risk for subsequent dementia [11]. Music therapy has been commonly used to reduce depressive symptoms in elderly people with depression [12]. In addition, music therapy conducted in a group can help increase social interaction. This suggests the potential of

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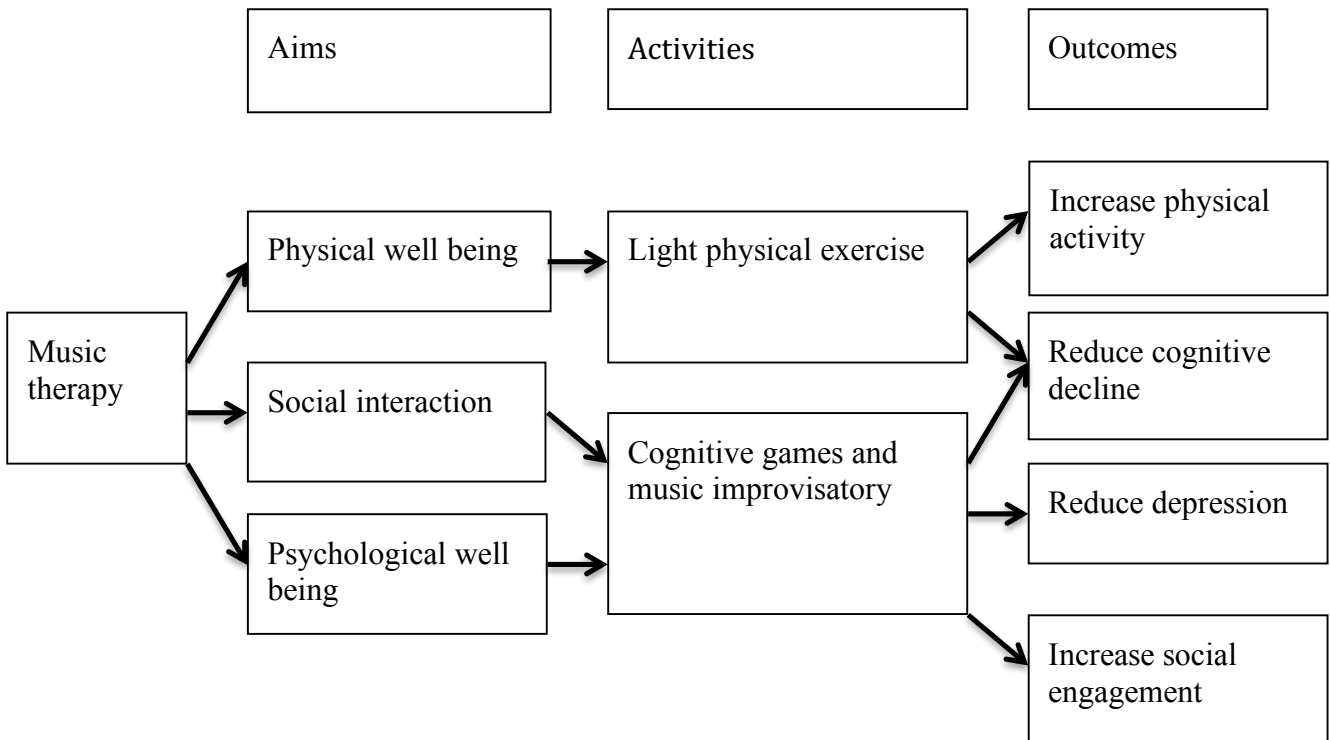
music therapy in battling social isolation and depression, thus delaying cognitive decline.

In addition to psychological benefits, music therapy also can promote physical activity in elderly through incorporating movement exercises. Music therapy activities such as playing percussion instruments can be easily combined with stretching exercises, simple dances, and movement. In a qualitative evaluation of a music therapy on elderly residents in a Taiwan nursing home, the residents expressed that music therapy increased their motivation to exercise [13]. On a group of dementia patients in Japan, music therapy maintained their physical states [14].

Benefits of music therapy for the elderly with health problems have been widely documented. In our local setting,

music therapy is largely used for gait training in stroke patients, speech training for aphasic patients, providing psychosocial support for mental health and palliative patients. However, its therapeutic use for healthy elderly living in the community has not been explored. Hence, our study aimed to describe the development of a group music therapy program for healthy elderly living in the community to improve physical and psychological well-being, and social interaction. Activities in music therapy such as social interaction during activities, light physical exercises, improvisatory and cognitive activities can result in increased physical activity and social engagement, and reduced cognitive decline and depression.

Figure 1 describes the framework of the study.



**Method**

Group music therapy was conducted for elderly above 60 years old. Participants were recruited from local elderly social groups (Active Aging Committee and Glowers Drama Group) by contacting the manager in-charge of the groups and by word-of-mouth. Each group consisted of five to seven participants. Three music groups were conducted. Prior to conducting the study, ethical approval was obtained, and all

participants signed an informed consent form. All elderly who were physically mobile and understood English were recruited into the study. Elderly who did not understand English were excluded.

*Music program*

The intervention consists of 4 weekly group sessions which lasted one-hour each. A certified music therapist conducted all the sessions. Participants engaged in different music activities

every week. Every session began with a “Hello” greeting song composed by the music therapist, and ended with a farewell song (Happy Trails by Dale Evans Rogers).

Physical activities included musical chairs, instrumental play with hand-held percussion instruments, (e.g. maracas, wood blocks, tambourine), and stretching exercises. Cognitive activities included musical bingo, guess the tune and musical improvisation. Tone chimes and body percussion were both a physical and cognitive activity as they required the participants to work on their hand-eye coordination, as well as their divided and alternating attention spans.

Activities chosen did not require prior knowledge in music for the elderly to participate in. The music therapist performed live music using an acoustic guitar. English & Mandarin oldies from the 1940s to 1970s (e.g. Let It Be, Que Sera Sera, Oh Carol, Top of The World, Moon Represents My Heart) were used for all activities to cater to participants’ age range.

For the musical chairs activity and instrumental play, the music therapist manipulates elements of music such as timbre, tempo and dynamics to facilitate sessions. i.e. playing louder on the guitar to elicit same response from the participants’ playing, increasing tempo to model after faster dance steps. Improvisational music on the guitar and piano were used for stretching exercises. Specific time signatures (e.g. 2/4, 3/4) were used to match body movements (e.g. marching, upper & lower limb stretching). Lyrics were replaced by instructions to minimize confusion on exercises.

“Let It Be” by The Beatles, and “Que Sera Sera” by Doris Day were chosen for the hand chimes activity due to their familiarity to the participants; chord progressions for these songs were also limited to 3 to 4 chords. The music therapist facilitated the activity as a conductor for initial trials before fading cues off subsequently; Participants followed visual and melodic cues from color-coded chord charts.

Lyric substitution was the only activity that used unfamiliar music. The “Addams Family Theme Song” and “Goodbye Song” were chosen because 1) melodic contours that could be easily learnt, 2) verses that were short and sweet, and 3) songs represented a specific theme such as group cohesiveness and farewell.

Moreover, the aim of the activities was to encourage social interaction amongst the elderly, while also enabling them to enjoy themselves during the sessions. Table 1 further describes the activity type and activities performed during the group music therapy sessions.

Activity type	Activity	Description of activities
Physical activities	Musical Chairs	Chairs were arranged in a circle. When the music stopped, the participants had to find a chair to sit on.
	Instrumental Play (e.g. hand-held drums, wood blocks, jingles, maracas, tambourine)	Participants were given hand-held percussion instruments to play with the music. Participants could also dance along while playing with the instruments.
	Stretching Exercises	Participants did some basic stretching exercises such as stretching to the left/right, and touching their toes.
Cognitive activities	Musical Bingo	Participants were each given a bingo sheet. The sheet contains titles of songs, names of instruments, name of singers, types of genre etc. Participants had to cross them out simultaneously.
	Guess the Tune	Participants had to guess the title of songs sung. The music therapist and participants sang the song together after guessing.
	Lyric Substitution	Participants were asked to change the song lyrics to “Addams Family” and the “Goodbye Song”.
Physical and cognitive activities	Hand Chimes	Participants were each given a color-coded tone chime in random order. Participants had to play music according to color-coded chord chart. Songs used are “Que Sera Sera”, and “Let It Be”.
	Body Percussion	Participants were grouped into pairs. Each group was given a specific rhythm to clap to; Participants had to sustain attention on their designated rhythm.

Table 1 Activity type and activities performed

In the first session, participants were allowed to introduce

themselves to the group using the musical chairs activity. This was followed by lyric substitution. As a group, participants would alter the lyrics of a song which would become the group’s theme song. The group would also sing the song every week. In the second session, the participants played with percussion instruments. This was accompanied by light stretching exercises and simple dances. Thereafter, the participants played music bingo/guess the song, which was followed by a sing-along of all the songs in the game. In the third session, participants played with the hand chimes. In the final session, participants were paired up and did hand rhythms.

*Program evaluation*

An evaluation of the music therapy program was conducted at the end of the four sessions. The group interviews were conducted by the primary investigator, and each interview took 1 hour. Questions included participants’ perceptions, activity preference, and acceptability of the program. The following broad questions were asked:

- How did you feel about the program overall?
- Which activity did you like most/least?
- How did you feel the program could be improved?

After the participants gave their responses, more in-depth explanations were sought from the participants by asking questions such as “why did you feel that way?”, or “what would you suggest?”

*Data analysis*

The interviews were transcribed. Key words mentioned from participants in the interviews were highlighted for their perception of the music therapy sessions. The participants’ preferences were recorded by first asking their preferences, and then a show of hands on those who agreed to the comments.

**Results**

*Participant characteristics*

Three music therapy groups were conducted, and 20 elderly participated. One female participant from group 1 dropped out of the study after the first session. The reason for drop out was being busy as she was still working. Of the 19 remaining participants, 16 attended all four sessions, and three attended three sessions. The mean age of the participants was 68.7±4.6 years, and they ranged from 60 to 76 years old. Majority were females (n=17, 85%), and there were three males (15%). Most participants had secondary (n=9, 45%) or post secondary (n=8, 40%) education. Three (15%) had no formal education.

The age, gender and education level of the participants by group is in table 2. The mean age of participants in group 3 was highest (72.3±3.5 years old), with 3 participants who had no formal education. Participants from groups 1 and 2 had a

minimum of secondary school education.

Although English is the common language amongst Singaporeans, there are still a vast number of people from the older generation who are unable to speak English. These older generations usually speak their own native language; the Malays speak Malay, and most of the Indians speak Tamil. However, the Chinese not only speak Mandarin, but a wide range of dialects including Hokkien, Teochew, Hainanese, Cantonese and Hakka.

*Table 2 Demographics of participants by group*

	Group 1 (n=7)	Group 2 (n=6)	Group 3 (n=7)
Age (years)			
Mean±SD	68.4±4.8	64.7±1.0	72.3±3.5
Range	60-76	63-66	67-76
Gender			
Male	2	0	1
Female	5	6	6
Education			
No formal education	0	0	3
Secondary	2	4	3
Post secondary	5	2	1

*Lyric replacement*

Lyric replacement was chosen as one of the activities as karaoke is a popular activity amongst elderly in Singapore. Groups 1 and 2 replaced the lyrics of the “Addams Family” song. The groups gave a name for their music group, and all the replaced lyrics were in English. Group 3 replaced the lyrics of the song chorus of “Beast – Living without you”. The replaced lyrics comprised of a few languages – English, Mandarin, Mandarin dialects, and Malay. The song lyrics of the three groups is in table 3.

*Table 3 Song lyrics replacement of participants*

Group 1	Our Music Family (Adapted from the Adams Family)
	We’re chirpy and we’re smiley
	Unique-y and witty
	We’re altogether whacky
	Our music family
	Our group is a playground
	When friends come to sing with us
	We’re really are a fantasy
	Our music family

## Group 2 The Sakev Sisters (Adapted from the Addams Family)

We're cheery and we're chirpy  
 Mysterious and curious  
 We're altogether funky  
 The Sakev Sisters  
 Our room is a playground  
 Where people come to have fun  
 We are happy altogether  
 The Sakev Sisters

## Group 3 Goodbye Song - Anonymous

再见 (Goodbye in Cantonese dialect) Bye Bye See You  
 我们要回家了 (We are going home in Hokkien) yay yay yay  
 再见 (Goodbye in Hainan dialect) 再见 (Goodbye in khek dialect) Oh Oh  
 Selamat Jalan Balik Kampong (Goodbye we are going home in Malay)

## Participants' evaluation

### Perception

All participants expressed they enjoyed the music therapy sessions, and felt that they had been brought back to their childhood. They described the sessions as being “fun”, “a place they can make new friends”, “able to learn new things”, and were willing to come back for more sessions. They felt that group rapport was also fundamental in motivating them to come back each week. All of them expressed they would attend these sessions if they were conducted on a regular basis in future.

### Preferences

The three groups had different preferences for the activities. 50% (n=3) of the participants in group 1 preferred the hand chimes and 50% (n=3) preferred the musical bingo. They enjoyed the mental stimulation from the hand chimes activity. Musical bingo was a game largely associated with luck, and they found it thrilling. Group 2 favoured activities that involved both physical and cognitive aspects, which included the hand chimes (n=2, 33%) and hand percussion (n=4, 66%) in the programme. All participants in group 3 (n=7) enjoyed the lyric substitution activity most as they could re-create songs comprising of multiple languages. They also enjoyed singing songs as a group, and found it more enjoyable compared to going to karaoke where they could only sing individually or in pairs.

### Programme improvement.

All participants found the one-hour session to be too short, and suggested to increase the session duration to 1.5 or 2

hours. In our programme, the physical and cognitive activities were limited to the hands. Group 2 also suggested having more of these cognitive activities that would involve the full body.

## Discussion

In the healthcare setting, the role of the music therapist is to provide functional and psychosocial support through music. However, in the community, the music therapist has to act as a channel to promote participation and connection among members in the community [15]. This was achieved successfully in our music therapy group. Participants expressed that they enjoyed the music activities, and made new friends in the short 4-week session. The increased social network can help mitigate the negative impact of aging on cognitive function and memory [16].

Through the cognitive and physical activities such as hand chimes and hand rhythms, we also helped to stimulate the memory and concentration of the elderly as they had to focus on their part in the music, and it increased physical activity as it involved hand movement. In our study, the physical activity was largely limited to the hands. However, in future music therapy sessions, we could incorporate activities which also involved body movement.

All the music activities proposed in our study was well accepted by the elderly even though the groups had difference preferences. This ascertained the feasibility these activities for the elderly. However, the activity preferences of the elderly in our study differed for each group. We propose that music therapy can be an activity for elderly in the community.

The preference for the musical bingo for group 1 could be attributed to social gambling being a preferred form of entertainment in Chinese [17], and musical bingo had some elements of luck and chance in it. In our local community centres, singing Karaoke is also a popular past-time among the Chinese elderly [18]. Hence, group singing during music therapy could be an activity that some of them enjoyed. The hand chimes and hand rhythms involved cognitive and physical functions. Hence, it would appeal to elderly who enjoyed the mental stimulation and physical movement.

In the lyric substitution activity, group three included words of various languages. This could be attributed to the education level of the participants. Participants in groups 1 and 2 had a minimum of secondary education, while some participants in group 3 had no formal education. Based on our local statistics, for adults above 55, 65.6% had below secondary education, and 17.2% secondary education [19]. Hence, groups 1 and 2 represented a more educated group of people compared to our local population. The education level of participants in group 3 could be more representative of our local demographics.

The use of a myriad of languages lyric substitution activity could be attributed to our multi-lingual society, where common words of various languages and dialects are infused into the daily language. Statistics from Index Mundi [20] census data shows that 36.3% of Singaporeans primarily speak Mandarin, while only 29.8% percent speak English. Although English is the common language amongst Singaporeans, there is still a vast number of people from the older generation who are not fluent in English, or prefer to speak their native language. The Chinese speak Mandarin and a wide range of dialects including Hokkien, Teochew, Hainanese, Cantonese and Hakka. In our day-to-day conversations, it is also common for people to include words of various languages and dialects. Hence, the lyric substitution by group 3 could be most representative of our local culture.

### Limitations of study and recommendations for future research

Only four music therapy sessions were conducted for each group, which could be too short to yield any changes in psychosocial measures. A longer-term study could be conducted to evaluate the long-term impacts of music therapy. Measures for psychosocial parameters such as stress and depression could be used to objectively evaluate the impacts of music therapy for elderly in the community. Future studies could also evaluate the effectiveness of the music therapy programme conducted by volunteers compared with trained music therapists. The use of volunteers could increase the feasibility of the programme in the community due to lack of availability of certified music therapists.

### Conclusion

Our music therapy program was well-received by the elderly in the community. The activities helped to increase physical activity and social engagement, and potentially reduced cognitive decline and depression. It could be proposed as a regular activity in the community. The music therapy sessions in this study were conducted by music therapists. However, as a regular activity in the community, volunteers who are interested in conducting these activities could be trained to conduct the sessions due to lack of availability of certified music therapists.

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