# MUSIC REMINISCENCE IN MUSIC THERAPY FOR ELDERLY POPULATION: A SCOPING REVIEW OF THE LITERATURE

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# บทเพลงแห่งความทรงจำเพื่อดนตรีบำบัดในกลุ่มประชากรผู้สูงอายุ: การทบทวนวรรณกรรมด้วยวิธีการกำหนดขอบเขต

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The purpose of this scoping review was to summarize the specific music interventions and clinical goals utilized in music-based reminiscence for elderly population with and without neurocognitive disorders. Fourteen articles meeting the inclusion criteria were selected in this review. The results showed music-based reminiscence interventions were conducted by both music therapists and non-music therapists. Interventions implemented by music therapists showed a greater diversity based on numerous goal domains compared to non-music therapists. Music therapists assess various domains of health comprehensively, while other professionals mostly used music-based reminiscence intervention to address mainly the cognitive domain. The most frequently utilized music intervention to induce reminiscence were music listening and singing. The most commonly used specific music strategies include the use of familiar songs considering participants' ages. However, the specific music strategies employed by music therapists tend to be more diverse, involving a variety of songs and the use of live music, which requires the musical skills of the music therapist. In conclusion, music-based reminiscence is a valuable intervention method with multiple benefits in the domains of quality of life, cognitive, and emotional well-being for the elderly population, both with and without neurocognitive disorders.



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# CHAPTER 1
# INTRODUCTION

In the year 2020, the demographic cohort of individuals aged 60 years and older surpassed the population of children under the age of 5 worldwide. By 2030, it's estimated that one in every six people worldwide will be 60 years or older, increasing the number from one billion in 2020 to 1.4 billion (World Health Organization, 2023). Thailand has been designated as an 'aged society' since 2005, with individuals aged 60 years and above constituting 10% of the nation's population. Out of Thailand's total population of 67 million, the most recent national statistics report indicates that 12 million Thai citizens fall within the elderly age demographic (World Health Organization, 2023). To address the challenges posed by the aging society issue, all countries are working to prepare their health and social systems to cope with the demands and problems arising from this demographic shift.

In the elderly, the appearance of numerous intricate health conditions, often referred to as geriatric syndromes, is a distinctive feature. One major symptom elderly people experience is memory loss. In healthy individuals, aging can cause decline in various aspects of cognitive performance (Gluff et al., 2019), Referred to as Aging-Associated Cognitive Decline (AACD), epidemiological evidence indicates that AACD is an aspect of typical aging rather than an indication of a pathological condition like Alzheimer's disease. (Deary et al., 2009). On the other hand, consistent cognitive and functional decline until the person's memory changes cause concern to many patients as they grow older. The most effective approach to treating conditions resulting in memory loss involves a collaborative partnership between the patient, their caregiver(s), and the clinicians offering various treatment options to slow

cognitive decline. In particular, the maintenance of cognitive functions in the elderly has been linked to dietary protein intake and physical activity (de Sousa et al., 2019; Wolfe, 2006). However, constraints may arise from the reduced receptiveness of frail elderly individuals to such treatment options, along with the inherent alterations in body composition associated with aging (de Sousa et al., 2019; Wolfe, 2006). These factors collectively pose challenges in achieving significant enhancements.. Alternatively, reminiscence therapy is believed to be an effective option in improving cognition and mood in older adults (Wang, 2007).

Reminiscence therapy is a specialized intervention which is used to help elderly individuals recall past experiences, in other words 'episodic memory.' Due to its many benefits, reminiscence therapy has been widely implemented with the elderly population, especially with dementia patients to provide support and counseling. The primary goal of reminiscence therapy is to maintain and enhance cognitive function related to long-term memory; a second aim can be to facilitate either intrapersonal or interpersonal development (Wang, 2007). However, reminiscence therapy requires specific strategic elements that can facilitate this memory recall, ranging from pictures, movies, everyday objects, holidays, activities (Chiang et al., 2010; Wu et al., 2018). One element that can spark episodic memory for these individuals is music. Furthermore, music can help elicit autobiographical memories by promoting positive emotional associations, and it is referred to as music reminiscence (Robert Moulias, 2017).



Music therapy has been shown to be useful for reminiscence, to stimulate long-term memories and specific memories in the elderly. In the article of Dassa (2018), A method is employed to craft a musical autobiography for an older

individual through one-on-one interviews, aiming to enhance well-being and foster a unique connection between the elderly participant and the interviewer. The elderly subjects predominantly shared memories related to music from their childhood and youth, highlighting a period when music held considerable importance in their lives.

From a preliminary search, 3 studies involving music reminiscence intervention were found. In the article of Mahendran et al. (2017), art combined with music reminiscence activities were used to improve the cognition of community-living elderly with mild cognitive impairments. Reminiscence therapy with music entailed listening and discussing activities, events, and experiences related to the music. It was reported that music reminiscence provoked shared feelings and boosted self-esteem. In the study of Haslam et al. (2014), three interventions were used including secular song reminiscence and religious song reminiscence. For secular song reminiscence, participants were encouraged to share and sing along with popular music from particular decades. As for religious song reminiscence, the focus was on experiencing and sharing religious songs. Facilitators were responsible for encouraging participants to sing along, to keep the focus on the songs at hand, and discussion between songs brief. Sarkamo et al. (2014) aimed to determine the efficacy of a novel music intervention based on coaching the caregivers of the elderly to use either singing or music listening regularly as a part of everyday care. The sessions consisted primarily of singing/listening to familiar songs. In addition, the intervention included regular musical exercises at home. Engaging in both singing and listening to music contributed to enhanced mood, orientation, and distant episodic memory. Additionally, there were some improvements in attention, executive function, and overall cognition. Singing specifically showed positive effects on short-term and

working memory, as well as on caregiver well-being. On the other hand, music listening positively impacted the quality of life.

These examples showed that music-based reminiscence intervention was used in several ways to achieve various domains of goals. Currently, there is a systematic review of utilizing both music and reminiscence activities in elderly adult populations for well-being (Istvandity, 2017), and there is a systematic review of music interventions for the cognitive and behavioural symptoms of mild cognitive impairment (Jordan et al., 2022), however, there is no study that reviews how music-based reminiscence interventions are used in terms of clinical goals in various domains, music intervention, and strategies for the elderly population. Therefore, this scoping review was conducted to gather knowledge of the use of music reminiscence for the elderly population.

A scoping review helps organize information about new or developing topics (Mak & Thomas, 2022). Conducting a scoping review is useful for understanding a wide range of evidence in a certain field and helpful for reviewing a specific topic or specific treatments (Munn et al., 2018). As gaining more knowledge of the music-based reminiscence interventions can be useful for music therapists to become more aware in working, this study is conducted to create a comprehensive overview of music-based interventions designed to foster reminiscence in the elderly population.



### 1.1 Research Questions

The research questions for this study are:

1) What are the goals in utilizing music reminiscence?

2) Which musical interventions are used for facilitating music reminiscence?

## 1.2 Definition of Terms

**1.2.1 Reminiscence.** Reminiscence is a therapy which is used to improve the well-being of the elderly population, as well as address memory-related symptoms, as an alternative or complementary therapy to pharmacological treatments. There is growing evidence which shows specific combinations of these treatments will produce well-being outcomes unique to these populations. These treatments can be used both in group and/or individual sessions. This therapy is often used by the elderly population and dementia care and was found to have a positive effect on cognition, memory in particular (Istvandity, 2017)

Music-based reminiscence therapy involves listening activities during sessions which are related to past experiences. Remembrance encourages a sense of togetherness and increases self-esteem. During activities in which the recipient listens to music or participates in music making, memories may be recollected along with positive mood associated with them (Mahendran et al., 2017)

Music reminiscence can help to stimulate many areas such as neural pathways as well as different parts of the brain. Listening or playing music stimulates the auditory cortex. It can improve the recipient's attention, memory and mood and elicits some past responses (Engelbrecht et al., 2021).

**1.2.2 Elderly Population.** The elderly population comprises individuals aged 65 years and older. When it comes to treatment, this demographic faces challenges, as there are limited areas within each country that specialize in providing healthcare and physical care tailored specifically for older individuals. (OECD, 2023).

Common symptoms of the aging elderly population may include hearing loss, cataracts, and refractive abnormalities, back and neck pain and osteoarthritis, chronic

obstructive pulmonary disease, diabetes, depression and dementia. When people get older, they tend to experience multiple conditions at the same time (World Health Organization, 2022).

The aging elderly population is also characterized as having severe complex health conditions commonly known as geriatric syndrome. It is often the result of several underlying factors, such as weakness, or otherwise known as frailty, bladder or urinary incontinence, falls, delirium, and pressure sores. (World Health Organization, 2022)

**1.2.3 Elderly with Neurocognitive Disorders.** Neurological disorders are prevalent among the elderly, with conditions like Alzheimer's disease (AD), frontal lobe dementia, Lewy body dementia, Parkinson's disease, cerebrovascular disease, mild cognitive impairment (MCI), and age-related cognitive decline (AACD) being particularly pronounced. Ongoing research is actively exploring methods to address and treat these disorders. Changing demographics emphasize the necessity to devise strategies for countering cognitive impairments associated with both pathological conditions and the natural aging process (O'Hara et al., 2001).



**1.2.4 Music Intervention.** A type of strategic intervention occurs when a therapist actively participates in aiding the positive growth and transformation of a client. This includes the use of verbal, non-verbal, and musical intervention to elicit a particular response or facilitate the intended change. Non-verbal approaches involve the use of signs, symbols, and gestures, while musical interventions encompass activities such as singing, songwriting, playing instruments, listening, composing, and improvising (Kirkland, 2013).

# CHAPTER 2
# METHODOLOGY

## 2.1 Scoping Review

A scoping review is a type of review undertaken to identify and synthesize the entirety of pertinent studies, encompassing both established and recent contributions to gain insights into the extent of scholarly investigations within a particular domain, and comprehend the breadth and depth of the subject matter covered (Mak & Thomas, 2022). The scoping review methodology can combine evidence from various types of research, including qualitative, quantitative, case studies, and clinical reports, and stands as a widely employed approach for informed decision-making and scholarly inquiry (Peters et al., 2020).

An overview of the steps involved in conducting scoping reviews is provided below.

Step 1: Identifying the Research Question

Step 2: Identifying Relevant Studies

Step 3: Selecting Studies to Be Included in the Review

Step 4: Charting the Data

Step 5: Collating, Summarizing, and Reporting the Results

A scoping review could be employed to succinctly synthesize the practical facets of a specific area of discipline (Mak & Thomas, 2022).

## 2.2 Data Sources and Search Strategy

A comprehensive search was conducted through the Chulalongkorn University Library electronic database and a search of journals related to multidisciplinary and music therapy. Databases searched included Academic Search Ultimate, PubMed,

ScienceDirect, PsycARTICLES, Taylor & Francis Journals. In addition, hand search was also conducted for the Journal of Music Therapy and Nordic Journal of Music Therapy.

The search utilized specific keyword search strings, namely ("nursing home" OR elder* OR "skilled nursing" OR geriatric OR "older adult*" OR Aging OR "senior citizen" OR gerontology OR "Old age" OR "elder care" OR "long-term care" OR "long term care" OR "long term care") AND ("song reminiscence" OR "musical life review" OR "musical history" OR "musical memory" OR "music reminiscence" OR "song life review" OR "song history" OR "music and memory" OR "music and reminiscence" OR "musical reminiscence" OR "music and song recall" OR "music and memory recall").

**2.3 Inclusion and Exclusion Criteria**

Articles identified through the keyword and hand search were then selected for review according to the specified inclusion and exclusion criteria. Studies were included when they met the inclusion criteria.

1. All studies that involved the use of music-based reminiscence intervention in any format and setting.
2. All studies with any designs.
3. All studies conducted by any healthcare professionals for the elderly population including individuals with and without neurocognitive disorders such as dementia, Alzheimer's, Mild Cognitive Impairment (MCI).
4. Articles published in English.

5. Articles published in peer-reviewed journals

Studies were excluded when they met the exclusion criteria.

1. Review type studies (systematic review, scoping review)

2. Opinion papers lacking specific illustration of music reminiscence intervention

**2.4 Data Extraction**

The data from all studies included was then extracted in the *Microsoft Excel* spreadsheet. Information from studies was categorized to analyze characteristics of studies and characteristics of intervention. This scoping review identified and analyzed items including:

1. General characteristics such as journal, language, country, study type, study design, and setting
2. Goal domain
3. Clinical Goals
4. Format (group/individual)
5. Intervention provider
6. All musical interventions utilized
7. Selection of music by
8. Music Delivery Method
9. Specific intervention strategies for promoting reminiscence
10. Outcome

11. Outcome measurements

12. Recommendation

# CHAPTER 3

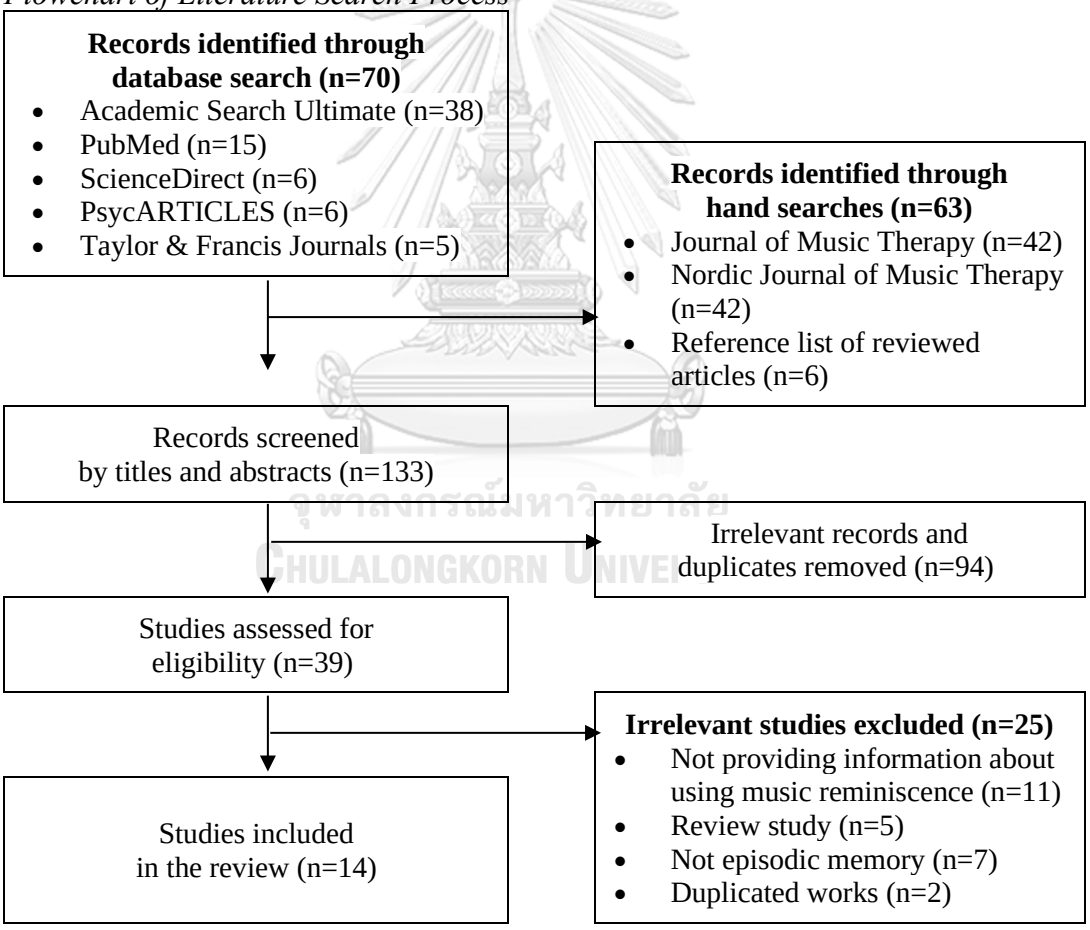
# RESULTS

## 3.1 Study Selection Process

Based on the keyword search of the major databases listed in the previous chapter, a hand search of scholarly journals related to music therapy, a total of 133 studies were found. Duplicate articles were checked, and redundant copies from other sources were excluded.

**Figure 1**

*Flowchart of Literature Search Process*



### 3.2 General Characteristics of Included Studies

This review included 14 selected studies, of which 11 were of a quantitative nature, and 2 were qualitative studies, and 1 study was a mixed-method study. Studies were chosen based on the specified inclusion and exclusion criteria. 133 articles were excluded from this review due to not meeting the inclusion and exclusion criteria. (Figure 1). Selected studies were published worldwide, including the United States (n=5), Canada (n=2), Japan (n=2), Finland (n=1), France (n=1), Taiwan (n=1), Ireland (n=1), and United Kingdom (n=1). Publication of selected articles weren't limited to specific years.

Overall, in addition to healthy older adults, there were three types of clientele with neurocognitive disorders. The most common type investigated was with elderly people with dementia (n=6)(Ashida, 2000; Kelly & Ahessy, 2021; Otera et al., 2013; Sarkamo et al., 2014; Takahashi & Matsushita, 2006; Tz-Han et al., 2023), followed by healthy elderly (n=5) (Dassa, 2018; Mahendran et al., 2017; Narme et al., 2016; Rao et al., 2021; Wylie, 1990), individuals with Alzheimer's disease (n=2)(Cuddy et al., 2015; Pollack & Namazi, 1992), and those with MCI (n=1)(Haslam et al., 2014)

**Table 1**
*General characteristic of included studies*

| 1st Author, Year | Country | Study type | Study design | Setting | Population |
|---|---|---|---|---|---|
| Ashida, 2000 | United States | Quantitative | RCT | Residential care facility | Dementia |
| Cuddy, 2015 | Canada | Quantitative | Basic research | N/A | Alzheimer's |
| Dassa, 2018 | United States | Qualitative | Grounded theory | Community, assisted living | Healthy elderly |
| Haslam, 2013 | Canada | Quantitative | RCT | Care community | MCI |
| Kelly, 2021 | Ireland | Mixed-method | Exploratory Study | Residential care unit | Dementia |
| Mahendran, 2017 | United States | Quantitative | RCT | Community living setting | Healthy elderly |
| Narme, 2016 | France | Quantitative | qRCT | N/A | Healthy elderly |
| Otera, 2013 | Japan | Qualitative | Case study | Psychiatric hospital | Dementia |
| Pollack, 1992 | United States | Quantitative | qRCT | Alzheimer's care and research | Alzheimer's |
| Rao, 2021 | United Kingdom | Quantitative | Survey | Online | Healthy elderly |
| Särkämö, 2013 | Finland | Quantitative | RCT | Activity centers and inpatient centers. | Dementia |
| Takahashi, 2006 | Japan | Quantitative | RCT | A special home for the aged | Dementia |
| Tz-Han, 2023 | Taiwan | Quantitative | RCT | Daycare centers for dementia | Dementia |
| Wylie, 1990 | United States | Quantitative | One-way factorial design | Nursing Home Residents | Healthy elderly |

### 3.3 Characteristics of Intervention

Characteristics of Intervention will include information about the facilitator, format, whether group or individual, and also the intervention duration. Within the set of 14 articles under consideration, this compilation consisted of studies conducted by music therapists (n=9), non-music therapists (n=2). In the realm of individual interventions, there were (n=7), while group interventions were represented by (n=6). Articles which did not specify included (n=1) did not specify the nature of the interventions. These details are evident in Table 2.

In terms of facilitators, 9 studies provided by music therapists as sole facilitators (Dassa, 2018; Kelly & Ahessy, 2021; Mahendran et al., 2017; Otera et al., 2013; Pollack & Namazi, 1992; Särkämö et al., 2013; Takahashi & Matsushita, 2006; Wylie, 1990) 1 study used a psychologists (Cuddy et al., 2015) 1 study used a researcher (Tz-Han et al. , 2023) and 3 studies did not reveal the identities of the facilitators (Haslam et al., 2013; Narme et al., 2016; Rao et al., 2021).

**Table 2**

*General characteristic of sessions*

| 1st Author, Year | Facilitator(s) | Population | Format | Duration (min) |
|---|---|---|---|---|
| Ashida, 2000 | Music therapist | Dementia | Group | 38-45 |
| Cuddy, 2015 | Psychologists | Alzheimer's | N/A | N/A |
| Dassa, 2018 | Music therapist, Recreational therapist, Social workers, Physical therapists | Healthy elderly | Individual | 60 |
| Haslam, 2013 | N/A | MCI | Group | 30 |
| Kelly, 2021 | Senior music therapist, Clinical supervisor, Music therapist | Dementia | Individual | N/A |

| 1st Author, Year | Facilitator(s) | Population | Format | Duration (min) |
|---|---|---|---|---|
| Mahendran, 2017 | Art therapist, Music therapists | Healthy elderly | Group | 60 |
| Narme, 2016 | N/A | Healthy elderly | Individual | N/A |
| Otera, 2013 | Music therapist | Dementia | Individual | 30-45 |
| Pollack, 1992 | Music therapist, Clinical nurse specialist | Alzheimer's | Individual | 20 |
| Rao, 2021 | N/A | Healthy elderly | Individual | N/A |
| Särkämö, 2013 | Music therapist | Dementia | Group | 90 |
| Takahashi, 2006 | Music therapist, Assistant music therapist | Dementia | Group | 60 |
| Tz-Han, 2023 | N/A | Dementia | Group | 60 |
| Wylie, 1990 | Music therapist | Healthy elderly | Individual | N/A |

### 3.4 Research Question 1

***What are the goals of music reminiscence intervention?***

Among the 14 reviewed studies, 13 studies indicated goals for music reminiscence intervention. Several studies indicated more than one goal for the music reminiscence intervention from various goal domains. These included cognitive (n=9), quality of life (n=6), emotional (n=5), psycho-social (n=2), physical (n=1), communication (n=1), spiritual (n=1), and behavior (n=1).

Of the 13 studies considered, 9 studies are provided by music therapists. The clinical goals employed by music therapists in implementing music-based reminiscence are to promote well-being (Dassa, 2018; Mahendran et al., 2017; Takahashi & Matsushita, 2006), to improve quality of life (Kelly & Ahessy, 2021; Sarkamo et al., 2014), to regular blood pressure (Takahashi & Matsushita, 2006), to

enhance mood (Kelly & Ahessy, 2021; Sarkamo et al., 2014), to decrease depressive symptoms (Ashida, 2000), to promote self-identity (Dassa, 2018), to promote social interaction (Kelly & Ahessy, 2021), to promote cognitive ability (Mahendran et al., 2017; Sarkamo et al., 2014), to promote reminiscence (Kelly & Ahessy, 2021; Wylie, 1990), to provide an opportunity for life review (Otera et al., 2013).

Two studies were provided by non-music therapists. Tz-Han et al. (2023) conducted a music-based reminiscence intervention to promote cognitive ability, to decrease depressive symptoms, and to reduce behavior symptoms of dementia. In the study of Cuddy et al. (2015), a music-based reminiscence intervention was employed to evoke personal memory.

Two studies were conducted by unspecified interventionists. Haslam et al. (2014) employed music-based reminiscence intervention to improve quality of life, to reduce anxiety, and to promote cognitive ability. In the study of Narme et al. (2016), a music-based reminiscence intervention was conducted to promote implicit and explicit memory. Refer to Table 3 for a list of goals specified to music reminiscence intervention.



**Table 3**
*Specific goals assigned for music reminiscence intervention*

| Intervention Provider | Goal Domains | Clinical Goals | 1st Author, Year |
|---|---|---|---|
| Music therapist | Quality of life | To promote well-being | Dassa, 2018; Takahashi, 2006; Mahendran, 2017 |
| | | To improve quality of life | Särkämö, 2013; Kelly, 2021 |
| | Physical | To regulate blood pressure | Takahashi, 2006 |

| Intervention Provider | Goal Domains | Clinical Goals | 1st Author, Year |
|---|---|---|---|
| | Emotional | To enhance mood | Särkämö, 2013; Kelly, 2021 |
| | | To decrease depressive symptoms | Ashida, 2000 |
| | Psycho-social | To foster self-identity | Dassa, 2018 |
| | | To promote social interaction | Kelly, 2021 |
| | Cognitive | To promote cognitive ability | Särkämö, 2013; Mahendran, 2017 |
| | | To promote reminiscence | Wylie, 1990; Kelly, 2021 |
| | Communication | To increase reciprocal communication | Särkämö, 2013 |
| | Spiritual | To provide an opportunity for life review | Otera, 2013 |
| Non-music therapist | Cognitive | To evoke episodic memory | Cuddy, 2015 |
| | | To promote cognitive ability | Tz-Han, 2023 |
| | Emotional | To decrease depressive symptoms | Tz-Han, 2023 |
| | Behavior | To reduce behavioral symptoms | Tz-Han, 2023 |
| Unknown | Quality of life | To improve quality of life | Haslam, 2013 |
| | Emotional | To reduce anxiety | Haslam, 2013 |
| | Cognitive | To promote cognitive ability | Haslam, 2013 |

| Intervention Provider | Goal Domains | Clinical Goals | 1st Author, Year |
|---|---|---|---|
| | | To promote implicit and explicit memory | Narme, 2016 |
| | | To promote memory recall. | Rao, 2021 |

*Note*. * The Study was conducted by a multidisciplinary team including a music therapist in a team.

One study conducted by Pollack and Namazi (1992) provided multiple music interventions including drumming and music-based reminiscence to promote social interaction, without specifying the goal for each intervention separately.

### 3.5 Research Question 2

***Which musical interventions are used for music reminiscence?***

The reviewed studies facilitated music reminiscence intervention by singing songs (n=8) (Ashida, 2000; Dassa, 2018; Haslam et al., 2014; Kelly & Ahessy, 2021; Otera et al., 2013; Pollack & Namazi, 1992; Sarkamo et al., 2014; Takahashi & Matsushita, 2006), listening to music (n=11) (Ashida, 2000; Cuddy et al., 2015; Dassa, 2018; Haslam et al., 2014; Kelly & Ahessy, 2021; Mahendran et al., 2017; Narme et al., 2016; Otera et al., 2013; Sarkamo et al., 2014; Tz-Han et al., 2023; Wylie, 1990), song discussion (n=2) (Mahendran et al., 2017; Wylie, 1990), Song Selection (n=1) (Takahashi & Matsushita, 2006). Refer to table 5 for a list of interventions employed to deliver music-based reminiscence.

**Table 4**
*Comparison of music delivery methods*

| Intervention Provider | Musical Delivery Method | 1st Author, Year |
|---|---|---|
| Music Therapis | Live music accompanied by guitar | Ashida, 2000; Dassa, 2018; Särkämö, 2013 |
| | Live music accompanied by piano/keyboard | Otera, 2013; Särkämö, 2013 |
| | Live music with other instrument i.e. kantele | Särkämö, 2013 |
| | Live music with unknown accompaniment | Takahashi, 2006 |
| | Recorded music | Dassa, 2018; Mahendran, 2017; Särkämö, 2013; Wylie, 1990; |
| | Unknown | Kelly, 2021; Pollack, 1992 |
| Non-music therapist | Recorded music | Cuddy, 2015 |
| | Unknown | Tz-Han, 2023 |
| Unknown | Recorded music | Haslam, 2013; Narme, 2016 |



**Table 5**
*Comparison of music reminiscence intervention by type of intervention provider*

| Intervention Provider | Musical Interventions | 1st Author, Year |
|---|---|---|
| Music Therapist | Singing songs with live music accompaniment | Ashida, 2000; Dassa, 2018; Otera, 2013; Särkämö, 2013; Takahashi, 2006 |
| | Listening to live music | Otera, 2013; |
| | Listening to recorded music | Mahendran, 2017; Särkämö, 2013; Wylie, 1990 |
| | Listening to unknown musical delivery method | Kelly, 2021 |
| | Singing songs with unknown | Kelly, 2021; Pollack, 1992 |

| Intervention Provider | Musical Interventions | 1st Author, Year |
|---|---|---|
| | musical delivery method | |
| | Song discussion | Mahendran, 2017; Wylie, 1990 |
| | Song Selection | Takahashi, 2006 |
| Non-music therapist | Listening to recorded music | Cuddy, 2015 |
| | N/A | Tz-Han, 2023 |
| Unknown | Listening to recorded music | Haslam, 2013; Narme, 2016 |
| | Singing songs to CD | Haslam, 2013 |

***Comparison of strategies used in music reminiscence intervention by type of intervention provider***

Strategies employed in music reminiscence interventions by the intervention providers, encompassing both music-specific strategies and non-music strategies are presented in Table 6 and Table 7.

**Table 6**
*Comparison of specific music strategies used by intervention providers*

| Intervention Provider | Specific music strategies | 1st Author, Year |
|---|---|---|
| Music Therapist | Use familiar songs considering participants' ages | Ashida, 2000; Otera, 2013; Takahashi, 2006; Wylie, 1990 |
| | Use traditional folk songs and popular songs | Särkämö, 2013; Takahashi, 2006 |
| | Provide original version of the recordings | Dassa, A. 2018 |
| | Use songbooks | Särkämö, 2013 |
| | Use nostalgic music | Kelly, 2021 |
| Non-music therapist | Use familiar songs | Cuddy, 2015 |
| | Use of cultural festival music | Tz-Han, 2023 |
| Unknown | Use of popular songs | Rao, 2021; Haslam, 2013 |
| | Use of religious songs from different decades | Haslam, 2013 |
| | Use of "Emotional Melody" | Narme, 2016 |

**Table 7**
*Comparison of specific non-music strategies used by intervention providers*

| Intervention Provider | Specific non-music strategies | 1st Author, Year |
|---|---|---|
| Music Therapist | Use open discussion about songs | Ashida, 2000; Mahendran, 2017; Wylie, 1990; |
| | Use open-ended questions | Dassa, 2018 |
| | Use non-directive interactions and empathetic listening | Otera, 2013 |
| | Use group based physical or social activities | Särkämö, 2013 |
| | Use themes for each session | Särkämö, 2013 |
| | Use familiar objects | Wylie, 1990 |
| | Use combination with art therapy | Mahendran, 2017 |
| Non-music therapist | Use questionnaires | Cuddy, 2015 |
| | Use of pictures and somatosensory interactive games | Tz-Han, 2023 |
| Unknown | Use story reminiscence | Haslam, 2013 |
| | Use questionnaires | Rao, 2021 |



### 3.6 Additional Analysis

***Musical recommendation***

Wylie (1990) recommended investigating subjects' preferences for songs or various music genres to evoke reminiscence. This exploration could provide insights into the connection between music and the reminiscence process, as it may bring forth specific emotions or feelings. Allowing subjects' to choose their preferred music could empower them in the process, shedding light on how the elderly utilize music for reminiscence and the potential benefits derived from initiating reminiscence through music.

***Non-musical recommendation***

Wylie (1990) suggests that in upcoming research on materials to trigger reminiscence, it is advisable to incorporate a greater variety of items and materials. Additionally, careful consideration should be given to the manner in which these materials are presented.

# CHAPTER 4
# DISCUSSION

## 4.1 Summary of Results

This scoping review aimed to explore the utilization of music-based reminiscence therapy in the elderly population. 14 studies were included based on the inclusion criteria. From retrieved studies, it was found that music-based reminiscence intervention was conducted by various professionals. Specifically 9 studies were conducted by music therapists, 2 studies were conducted by non-music therapists, and 3 studies did not specify the intervention provider.

In terms of clinical goals, from retrieved studies, music therapists mostly used music-based reminiscence intervention in the quality of life domain (5 studies) including to promote well-being (Dassa, 2018; Mahendran et al., 2017; Takahashi & Matsushita, 2006), and improve quality of life (Kelly & Ahessy, 2021; Sarkamo et al., 2014), in the cognitive domain (4 studies), including promoting reminiscence (Kelly & Ahessy, 2021; Wylie, 1990), and promoting cognitive abilities (Mahendran et al., 2017; Sarkamo et al., 2014), in the emotional domain (3 studies). This involved enhancing mood (Kelly & Ahessy, 2021; Sarkamo et al., 2014), and decreasing depressive symptoms (Ashida, 2000).

In contrast, non-music therapists in both 2 studies used music-based reminiscence intervention to target cognitive goals. This included evoking personal memory (Cuddy et al., 2015) and promoting cognitive ability (Tz-Han et al., 2023). For clinical goals where the intervention provider is not specified, the use of music-based reminiscence interventions also targeted cognitive goals (3 studies) aimed to

promote emotional memory (Narme et al., 2016), memory recall (Rao et al., 2021), and cognitive ability (Haslam et al., 2014).

### 4.2 Comparison of goals for music-based reminiscence by intervention providers

From retrieved studies, it could be analyzed that mostly music-based reminiscence intervention is used to address the cognitive goal. As the use of music emerged as a valuable tool for enhancing cognition in the elderly (Cuddy et al., 2015), music reminiscence emerged as a promising tool for assisting the elderly in memory recall and emotional well-being (Narme et al., 2016), these could be the reason for music therapist, non-music therapists and other interventionists use music to target this area of need. However, music therapists have a greater diversity and of goal domains compared to non-music therapists and unspecified interventionists, as music therapists assess various domains of health comprehensively and address the needs and strengths of clients comprehensively (AMTA, 2015).

Music reminiscence interventions provide opportunities for recalling memories in the past, initiative, and creativity, these can support stimulation of cognitive levels in the elderly population (Kelly & Ahessy, 2021). Both engaging in singing and listening to music exhibited a favorable impact on overall mood in the extended duration (Sarkamo et al., 2014), contributing to the sustained positive effects on mood and cognition. In addition, being able to share musical experiences in music reminiscence, can provide the elderly new perspective on their lives (Dassa, 2018), which can help the elderly gain a well-being and quality of life aspect. Therefore, music-based reminiscence intervention appeared to be useful not only for recalling memories from the past but also for other domains of health.

As for musical intervention, the majority of music therapists primarily utilize singing interventions, supported by a total of 7 studies (Ashida, 2000; Dassa, 2018; Kelly & Ahessy, 2021; Otera et al., 2013; Pollack & Namazi, 1992; Sarkamo et al., 2014; Takahashi & Matsushita, 2006), which is correlated with proved beneficial in accessing the memories of elderly individuals from singing (Dassa, 2018). Singing to music creates a powerful experience, helping elicit vivid memories in the elderly (Dassa, 2018). Additionally, singing has been shown to enhance positive emotions (Kelly & Ahessy, 2021).

Moreover, listening interventions used by music therapists are supported by a total of 7 studies (Ashida, 2000; Dassa, 2018; Kelly & Ahessy, 2021; Mahendran et al., 2017; Otera et al., 2013; Sarkamo et al., 2014; Wylie, 1990). Listening to meaningful and memorable songs for the elderly has been shown to help recall memories from the past (Otera et al., 2013). Additionally, listening to old songs enabled the elderly to recall personal memories (Wylie, 1990). It serves as a beneficial option for the elderly, aiding in the recollection of memories from the past and some of their personal experiences.



In addition, music therapists also use song discussion in 2 studies (Mahendran et al., 2017; Wylie, 1990), and song selection in 1 study (Takahashi & Matsushita, 2006). These activities serve as effective means to stimulate the memories of elderly individuals in every intervention (Takahashi & Matsushita, 2006).

As for musical interventions used by non-music therapists, both 2 studies identified the use of listening intervention (Cuddy et al., 2015; Tz-Han et al., 2023). Regarding musical intervention used by unspecified interventionists, 1 study included a singing intervention (Haslam et al., 2014), and 2 studies included listening

interventions (Haslam et al., 2014; Narme et al., 2016). Engaging in singing is recognized for its positive impacts on health and overall well-being (Haslam et al., 2014), whereas listening has the potential to enhance the clarity of memories in older individuals. (Narme et al., 2016), can evoke positive memories, facilitate communication, and potentially alleviate feelings of a lost sense of self. (Cuddy et al., 2015).

The differences between musical interventions used by music therapists, non-music therapists, and unspecified interventionists have been shown. Music therapists demonstrate a greater diversity in their use of musical interventions compared to non-music therapists and unspecified interventionists. These interventions include music-based reminiscence, singing intervention, and listening intervention. The simplicity of singing and listening interventions makes them accessible to a wide range of participants, including elderly individuals who may have limited physical abilities. This highlights why many music therapists choose these interventions, as they can be inclusive and effectively engage participants, even those with limited mobility.



For the strategies used in music reminiscence intervention, The majority (4 studies) indicate that music therapists used familiar songs considering participants' ages (Ashida, 2000; Otera et al., 2013; Takahashi & Matsushita, 2006; Wylie, 1990). The use of familiar songs aims to prompt discussions about the client's past life, and engaging in singing and listening activities stimulates the recollection of memories in the client (Otera et al., 2013). Old songs or familiar songs have the potential to evoke memories from the past.

In addition, music therapists from 2 studies employ strategies including using traditional folk songs and popular songs (Sarkamo et al., 2014; Takahashi &

Matsushita, 2006). Classic folk tunes and popular songs assist in promoting relaxation, triggering reminiscence, or adding vibrancy (Sarkamo et al., 2014). Traditional songs also have the potential to stimulate memories, especially in the elderly.

Moreover, specific music strategies by music therapists also include using original recordings (Dassa, 2018), songbooks (Sarkamo et al., 2014), and nostalgic music (Kelly & Ahessy, 2021). Singing accompanied by guitar is also mentioned in the study conducted by Ashida (2000).

Non-music therapists employ strategies in music reminiscence intervention, including the use of familiar songs (Cuddy et al., 2015) and the use of cultural festival music (Tz-Han et al., 2023). It can be seen that non-music therapists also use familiar songs to help recall memories and also talk about memories created by familiar songs.

Lastly, unspecified interventionists employ various strategies in music reminiscence interventions, including the use of popular songs (Haslam et al., 2014; Rao et al., 2021), the use of unfamiliar excerpts according to feelings (Narme et al., 2016), and the use of religious songs from different decades (Haslam et al., 2014). Popular music is best recalled, and elderly individuals distinctly remember popular songs from various periods (Rao et al., 2021).



There were similarities and differences in specific music strategies used by music therapists, non-music therapists, and unspecified interventionists. The similarity includes using familiar songs in music reminiscence intervention. Songs serve as a means to evoke memories of the past similarly across these groups (Kelly & Ahessy, 2021). However, the specific music strategies employed by music

therapists tend to be more diverse, involving the use of a wide variety of songs and the use of live music which require the musical skills of the music therapist.

In the specific non-music strategies employed by music therapists, non-music therapists, and unspecified interventionists, there are both similarities and slight differences. Specific non-music strategies by music therapists include open questions (Dassa, 2018), non-directive interactions and empathetic listening (Otera et al., 2013), group-based physical or social activities, having a theme for each session (Sarkamo et al., 2014), open discussion about songs (Ashida, 2000; Mahendran et al., 2017; Wylie, 1990), showing familiar objects (Wylie, 1990), and combining with art therapy (Mahendran et al., 2017).

In terms of specific non-music strategies employed by non-music therapists, questionnaires (Cuddy et al., 2015), the use of pictures, and somatosensory interactive games (Tz-Han et al., 2023) are included. As for unspecified interventionists, specific non-music strategies include story reminiscence (Haslam et al., 2014) and survey questions (Rao et al., 2021). However, the specific non-music strategies employed by music therapists, non-music therapists, and unspecified interventionists seem to involve similar questioning techniques. Yet, music therapists tend to incorporate conversational inquiries related to songs, emphasizing dialogue through various song lyrics.



In conclusion, various clinical goals have been used in music-based reminiscence intervention which correlated with the needs of the elderly population. Music therapists showed a greater diversity in the use of clinical goals, musical interventions, and specific music strategies, compared to non-music therapists and unspecified interventionists.

Considering that the retrieved studies were conducted in Western culture, this aspect should be taken into account when music therapists aim to incorporate the use of music-based reminiscence interventions into their respective cultural contexts.

# CHAPTER 5
# CONCLUSION

## 5.1 Summary of findings

This scoping review identified the clinical goals, music interventions, and specific strategies used in music-based reminiscence intervention for the elderly population. A search was conducted across five databases to identify articles meeting the inclusion criteria. This review incorporated fourteen articles, encompassing both quantitative and qualitative studies.

In this review, music-based reminiscence interventions were conducted by music therapists, non-music therapists, and unspecified intervention providers. The results of this review indicated that predominantly, music therapists used music-based reminiscence interventions to address clinical goals in the quality of life domain (5 studies), cognitive domain (4 studies), and emotional domain (3 studies). The most frequently employed goal was promoting wellbeing. Non-music therapists and unspecified interventionists commonly focused on clinical goals within the cognitive domain. The diversity in clinical goals used by music therapists is associated with the specific needs of the elderly population.



The most commonly used music interventions are listening intervention and singing interventions. In the music intervention domain of music therapists, there is a greater variety compared to non-music therapists. Music therapists employ singing (7 studies), listening (7 studies), song discussion (2 studies), and song selection (1 study). It can be observed that music therapists use a greater diversity in their use of musical interventions compared to non-music therapists and unspecified

interventionists. Non-music therapists tend to utilize listening interventions without the use of other interventions.

The most commonly used specific music strategies include the use of familiar songs considering participants' ages (4 studies), and using traditional folk songs and popular songs (2 studies). In general, the emphasis is on familiar songs or popular songs that evoke memories for the elderly participants.

The most commonly used specific non-music strategy was open discussion about songs (3 studies). In each study, there are questions and discussions related to the songs used with elderly participants.

In conclusion, the reviewed studies illustrate multiple methods of conducting music-based reminiscence for elderly population for various goal domains. Music based reminiscence is a valuable intervention method with multiple benefits in the domains of quality of life, cognitive, emotional for elderly population with and without neurocognitive disorders.

**5.2 Recommendations for Future Research**



The absence of widespread applicability stems from the specific participant inclusion criteria outlined in each study, necessitating a broader replication of the research with an expanded sample size to enhance generalizability.

The difference in the effectiveness of music-based reminiscence intervention conducted by music therapists and non-music therapists for this population could be more explored in future research.

Given that the existing studies are predominantly conducted in Western cultures, there is an opportunity for future research, particularly in the realm of Asian

cultures. This exploration could provide valuable insights into the cross-cultural applicability and impact such interventions.

**5.3 Limitations**

There might be some papers missing due to search string, database coverage, accessibility and library accessibility. Hence, the music-based reminiscence interventions and strategies discussed in this review might not be fully inclusive, as certain studies could have been left out.

This comprehensive scoping review has offered a broad overview of the utilization of music-based reminiscence interventions among the elderly population. However, certain aspects of these interventions may not have been comprehensively examined, primarily due to the absence of detailed descriptions of music therapy interventions or protocols in certain studies.

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