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Music Therapy: Revitalizing Alzheimer's Disease Patients

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ABSTRACT

This paper explains the different benefits that music therapy has on patients with Alzheimer's disease. It will briefly explain what Alzheimer's disease is: the causes, some of the symptoms, and the effects it may have. Also, the paper will explore the impact music has on the brain in regards to affecting a specific area, its connection to memory, and to emotions. Although Alzheimer's does not have a cure, research has shown that music therapy does decrease the rate at which it grows. By looking at results from different research studies, a better understanding of what treatment or a specific session looks like as well as the comfort this method brings to families will be gained. Additionally, the paper will touch on traditional medication in an effort to show that music therapy provides certain advantages in terms of improving quality of life for the patient.

INTRODUCTION

In the beginning of her Alzheimer's treatment, Anne was very quiet and shy. She wouldn't talk unless specific questions were asked of her, and verbal interactions with the other members only happened when she was spoken to directly. She only participated in the activities that felt the most comfortable like singing and playing instruments. However by the end of the music therapy program, Anne had clear positive behavioral improvements. For example, she was more engaged when her favorite songs came on during a session and her posture improved. After every session was over, some members would stay in the room and chat about some of the aspects of the session or share memories that the music activities had brought up. From the fourth session onward, Anne stayed and became more responsive to others' comments by smiling, making eye contact, and even making comments herself. Outside of therapy, the staff

also noticed the improvements as she was more talkative and participated in other activities (Bruscia 23, 26).

Anne entered the music therapy program as a 68-year-old woman diagnosed with probable Alzheimer's disease in the moderate phase who enjoyed music. After her husband's death, her family described a progressive deterioration of her mood state and complaints about her short term memory. As time went by, this began to impact her daily life activities requiring more and more assistance. Even though Anne also started showing problems with time orientation, her mobility was never impacted. Her neurologist referred her to a daycare center specializing in dementia patients where she could be during the day and then return home where she lived with her children and extended family in the afternoon. Upon arrival at the center, she received a comprehensive assessment by a neuropsychologist who referred her to their music therapy program that followed a cognitive-behavioral approach. She attended one-hour weekly sessions for 12 weeks in a group of five women where the goals were to maintain/improve cognitive skills, specifically in the areas of memory, language, praxis and orientation, and to improve the patients' mood state by actively engaging them in musical activities (Bruscia 20, 23). Many other patients have, like Anne, had success with music therapy.

In this paper I will focus specifically on how music therapy helps not only the patient with Alzheimer's disease but also their caregivers. Ultimately, I will illustrate how this form of treatment can be successful in dealing with Alzheimer's disease minimizing the reliance on prescribed medication from the early stage.

BACKGROUND

Alzheimer's Disease vs. Dementia

To understand Alzheimer's disease, a distinction between it and dementia must be made. Dementia is a general term that describes a group of symptoms like decline in memory, reasoning, or thinking skills ("Dementia vs. Alzheimer's Disease: What Is The Difference?"). As defined by the Alzheimer's Association, "it is caused by damage to brain cells that affects a person's ability to communicate, which can affect thinking, behavior, and feelings." In comparison, the Alzheimer's Association defines Alzheimer's as a degenerative brain disease that is caused by complex brain changes following cell damage. It "accounts for 60 - 80% of dementia cases" making it the most common cause of dementia ("What Is Alzheimer's Disease?").

Even though "the majority of people with Alzheimer's disease are 65 and older," there are "approximately 200,000 Americans under the age of 65 with younger-onset Alzheimer's disease" ("What Is Alzheimer's Disease?"). Furthermore, the Alzheimer's Association states that "Alzheimer's is the sixth leading cause of death in the United States" with an individual living on average four-to-eight years after diagnosis. On top of that, "more than 60% of Alzheimer's disease patients suffer from depression, agitation, aggression, violence, suicide, and sleep disorders" (Kumar et al.). Neither dementia nor Alzheimer's disease are a normal part of aging, and neither are preventable or curable ("Dementia vs. Alzheimer's Disease: What Is The Difference?"). However, there are treatments available which "can temporarily slow the worsening of dementia symptoms and improve quality of life for those with Alzheimer's and their caregivers" including music therapy ("What Is Alzheimer's Disease?").

A Brain with Alzheimer's Disease

A healthy brain contains “tens of billions of neurons - specialized cells that process and transmit information via electrical and chemical signals” (“What Happens to the Brain in Alzheimer’s Disease?”). According to the Natural Institute of Aging, “they send messages between different parts of the brain” and from the brain to the body. The vitality of the neurons depends on three actions: communication, metabolism, and repair. First, neurons need to have synaptic connections which happen as a result of neurotransmitters stimulating or inhibiting an activity in the receiving neuron. Secondly, they need to be able to break down chemicals and nutrients with glucose and oxygen supplied by the blood. Lastly, neurons self-adjust and repair to “strengthen or weaken synaptic connections, or even break down connections with one group of neurons and build new connections with a different group” (“What Happens to the Brain in Alzheimer’s Disease?”).

With Alzheimer’s disease, the brain loses large numbers of neurons because Alzheimer’s disrupts the processes neurons need to survive. The Alzheimer’s Association explains how two abnormal structures are responsible for damaging and killing nerve cells. The first, plaques, form when the protein beta-amyloid builds up between neurons. The second are neurofibrillary tangles which happen when there is an accumulation of the protein tau that builds up inside the neuron: primarily in neurons in areas of the brain concerned with memory (“What Is Alzheimer’s Disease?”; “What Happens to the Brain in Alzheimer’s Disease?”). The National Institute on Aging explains that cells that destroy waste and toxins in healthy brains fail to do so in a brain with Alzheimer’s. Eventually, the neurons die and connections are lost causing the brain to shrink (“What Happens to the Brain in Alzheimer’s Disease?”). These occurrences are normal with aging, however, with Alzheimer’s disease they are more common and happen in a predictable pattern (“What Is Alzheimer’s Disease?”).

Stages & Symptoms

The Alzheimer's Association explains that Alzheimer's disease is divided into three general stages, each with its own set of symptoms that vary from person to person and can overlap. However, the most telling symptom is trouble remembering newly learned information ("What Is Alzheimer's Disease?"). In the early stage, the individual can still function independently but may experience slight memory lapses ("Stages of Alzheimer's"). Other notable symptoms close family and friends may see are "difficulties coming up with the right word or name, losing or misplacing a valuable object, or experiencing increased trouble with planning or organizing" ("Stages of Alzheimer's"). The Alzheimer's Association also states that the middle stage can last for many years, and the individual can still participate in daily activities but with assistance. Some symptoms at this stage are:

> being unable to recall information about themselves like their address or telephone number, and the high school or college they attended; experiencing confusion about where they are or what day it is; showing an increased tendency to wander and become lost; and demonstrating personality and behavioral changes, including suspiciousness and delusions or compulsive, repetitive behavior like hand-wringing or tissue shredding. ("Stages of Alzheimer's")

Finally, in the late stage, the symptoms are severe and may require extensive care. The individual may "lose awareness of recent experiences as well as of their surroundings; experience changes in physical abilities, including walking, sitting and, eventually, swallowing; have difficulty communicating; and become vulnerable to infections, especially pneumonia" ("Stages of Alzheimer's").

MUSIC AND THE BRAIN

Music is powerful. It can help someone express themselves, preserve traditions, unite people, drive a social justice movement, influence our mood, and enhance daily activities. Research supports music's power, and scientists have found that "music stimulates many parts of the brain at the same time, such as those areas affecting language, mood, and movement, along with the senses of hearing sight, sound and touch" (Harper). Music with a quick tempo can alert someone and make them move. In contrast, a slower tempo can calm a listener (Harper). A quick tempo can also be perceived as more joyful than a slower one (Trimble and Hesdorffer). Additional research has also found that "the limbic system…reacts emotionally to music, giving the listener chills, joy, sadness, excitement, pleasure, and other feelings" (Kassem).

Besides the physical impact music has on us, it has a big connection to our memory. This is because sound reaches the area of the brain which stores short and long term memories (Maclean 13). And researchers have "pinpointed an area of the brain which stores memories by linking them to familiar songs and the emotions associated with those memories" (Harper). On top of that, "studies of people with memory disorders…suggest that neuronal memory traces built through music are deeply ingrained and more resilient to neurodegenerative influences" (Trimble and Hesdorffer). This is why "some people with Alzheimer's disease can continue to play an instrument even when the dementia has reached a point where they might not be able to recall their grandchildren's name" ("Music to Your Brain" 1).

MUSIC THERAPY FOR ALZHEIMER'S DISEASE

All the evidence highlighting what music can do supports the claim that music therapy can be an effective form of treatment for people with Alzheimer's disease. Music therapy, as defined by the American Music Therapy Association, is the "clinical and evidence-based use of music interventions to accomplish individualized goals within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program." It addresses "physical, emotional, cognitive, and social needs of individuals" ("What Is Music Therapy"). After an assessment, the therapist "provides the indicated treatment including creating, singing, moving to, and/or listening to music" ("What Is Music Therapy"). There are two main types: active and receptive music therapy. Active music therapy, "involves audience engagement…sing-alongs, call-and-response. There is no distinction between the performer and the audience" (Rajan). Receptive music therapy, "focuses more on instrumental music, often classical music, and it draws the listener inwards in a calm state of mind" (Rajan).

A noticeable change can be seen especially with patients in the late stage of Alzheimer's disease where communication is sometimes lost. Music therapy can "enhance communication" and reestablish contact (Bruscia 30-31). For music to have a greater positive effect on a person with Alzheimer's disease it has to be the music that was popular when they were between 18-25 years old and "have specific meaning in the life of a person" (Harper; Bruscia 31). Music meeting these criteria then "may provide a sense of safety and wellbeing, which in turn may decrease anxiety" (Bruscia 31). This is especially true if the patient is an immigrant because "singing songs of the native country and improvising on known rhythms provides a context of safety and recognition through the musical language of the clients' childhood culture" (Bruscia 30; Cox et al. 519).

The following will be examples of music therapy and the impact it had on the patients who received it. We'll start by looking at receptive music therapy with two examples, then active music therapy with two as well, a combination of both types highlighted in one, and end with a study that looked into the impact at a hormonal level.

Receptive Music Therapy Examples

Musician Toshiro Mitsutomi's Experience "Show your respect and dignity. Otherwise, music doesn't reach…their heart" is what Toshiro Mitsutomi, a musician with over 40 years of experience, hopes other musicians will do when they play for dementia patients. Mitsutomi has played in over 200 nursing homes, typically highlighting a receptive music therapy approach, where there have been patients with dementia. Based on his experience, he provides three tips for other musicians who wish to perform for dementia patients. First, they must play in close proximity to the patient. Second, they must play at eye level. Lastly, they must make eye contact. This is due to the fact that dementia patients might represent two behaviors: either sedentary or constantly upset. So, the direct engagement calms them or wakes them up (Mitsutomi).

Live, One-one-one, Musical Intervention A quasi-experimental study investigated the "effect of a live, one-to-one, musical violin intervention on agitated behaviour in people with moderate-severe AD in a residential care facility" (Cox et al. 517). There were "seven participants" total who "received the musical intervention on three occasions" (Cox et al. 517). Six of the seven, "were taking prescribed medication, including three who were taking neuroleptic (antipsychotic) medication to control behavioural symptoms of Alzheimer's disease, in addition to medication for other conditions" before and during the study (Cox et al. 520). The patients had a total of "18 minutes of live violin recital" in an "informal participation style"

(Cox et al. 519). The repertoire of songs included "Zip-A-Dee-Doo-Dah," "Auld Lang Syne," "Singin' In the Rain," and "Hokey Pokey" (Cox et al. 519). The interaction went like this: the researcher introduced herself, showed the instrument to the participant, stayed two meters away from the participant, performed, gave her gratitude to the participant, and left (Cox et al. 519).

The "agitated behaviours were considered in four subtypes: physically non-aggressive, verbally non-aggressive, physically aggressive and verbally aggressive behaviours" (Cox et al. 520). The results showed that live music can be "an effective strategy to reduce short-term agitated behaviour among people with Alzheimer's disease" (Cox et al. 517). There were "significant reductions in pacing/aimless wandering, repetitious mannerisms and general restlessness" observed (Cox et al. 522). Also, some "non-significant differences…in verbally aggressive, verbally non-aggressive and physically aggressive behaviours" were observed (Cox et al. 520).

Active Music Therapy Examples

Vonnie Patient with Early Stage of Dementia Vonnie "was born in the Dutch East Indies (now Indonesia), but spent her adult life in the Netherlands" (Bruscia 30). At the age of 30, she, her husband, and adoptive child migrated to the Netherlands after turmoil in the Dutch East Indies broke out as they sought independence from the Netherlands. When she started her sessions, she was an "83-year-old woman who was in the early phases of dementia" living in a nursing home suffering from "symptoms of depression, confusion, social isolation, hoarding behavior and delusional paranoia" (Bruscia 32-33). Her music therapy sessions were tailored around her Indonesian identity in efforts to create an environment of comfort, trust, and respect so she could better express herself. The therapist wanted to help Vonnie feel at home in the

nursing home. Being an immigrant in the Netherlands and the only person from Indonesia in the nursing home made her feel alone exacerbating her degenerative disease because her mind was not being stimulated (Bruscia 33-34).

In the first session, the therapist had "soft Indonesian music played on the stereo, Indonesian memorabilia lay on the table and a wide variety of Indonesian instruments were also available (bamboo percussion instruments, a bamboo flute and a ukulele)" (Bruscia 33). Plus, the therapist's parents were from Indonesia so she had a clear cultural understanding of Vonnie's life experiences. In that session, the therapist also played the ukulele, which made Vonnie cry as "the sounds reminded her of her mother and her youth in Indonesia" (Bruscia 34).

As Vonnie talked, the therapist would play and give "sound to her story right there in the moment" (Bruscia 34). The playing captivated Vonnie's attention and soon she too was playing some of the instruments during the sessions. The act of playing and singing lyrics helped her "express herself musically" and " in her native language" (Bruscia 34-35). Vonnie started to feel understood and recognized which helped her behavior in the nursing home as "a lot of her earlier problems no longer seemed an issue" (Bruscia 35).

Other things the therapist did to help spark Vonnie's memories was play "songs from her youth" and listen "to music she and her husband danced to; music that was popular in those days" (Bruscia 36). At times Vonnie felt "frustrated because she didn't know all the words to the different songs," which prompted her therapist to introduce improvisation (Bruscia 36). She encouraged Vonnie to sing about anything. After some tries on different sessions, "things that she had never spoken about before became songs, the lyrics developing spontaneously and creatively" aiding in her "release…about her past" (Bruscia 36). Towards the end of their

sessions, Vonnie's social behavior improved. She conversed with other people, talked about her past experiences to her occupational therapist, and shared her culture with others (Bruscia 36).

Rose Patient with Chronic Schizophrenia and Alzheimer's Dementia Rose was a blind "90-year-old Jewish immigrant" with "chronic schizophrenia and Alzheimer's dementia" who couldn't speak English (Bruscia 47). She typically sat "in her wheelchair outside her room" with a "radio nearby tuned to a classical station" for her appreciation (Bruscia 48). Due to her minimal verbal communication, she wasn't able to "actively share in the decision-making process involved in her treatment" (Bruscia 47). Nonetheless, Rose participated in music therapy for five years while at the nursing home (Bruscia 47).

Her normal behavior in the nursing home was either withdrawn or agitated. When agitated "her hands beat in a perseverative manner on the tray table attached to her chair" averaging "a rapid 178 pats per minute" (Bruscia 48). In recreational therapy, Rose didn't "initiate any contact with the outside world" seeming "either unable or unwilling to make connections to herself or others" (Bruscia 48). Even though some of her typical non-responsive social behavior carried over to some of the music therapy sessions, she had moments of liveliness where her body and soul seemed to reconnect thanks to the songs (Bruscia 48, 50).

For example, in one session Rose managed to occasionally stop the patting. The therapist sang and played three songs: "You Are My Sunshine," "Bei Mir Bist Du Schoen," and "Tumbalalaika" leaving space for Rose to chime in. She was able to sing "'la' in pitch on the final note" of the first song but continued to pat (Bruscia 49). In the second song she was "still and listen[ed] for 6 seconds," but didn't join verbally (Bruscia 49). As a result, the therapist began to strum her guitar at a tempo that "reflect[ed] Rose's patting tempo" (Bruscia 49). This caught her attention and so she stopped and breathed deeply before resuming her tapping at a

slower tempo. Her tapping had “accents that reflect[ed] the phrasing in the music” and they continued this musical conversation for about a minute (Bruscia 49). In the chorus of the last song Rose sang “in tempo and pitch” after the therapist verbally invited her to do so (Bruscia 49). She continued to sing irregularly and received some praise from the therapist. On the last repetition of the song she sang consistently (Bruscia 50). When they were done, the therapist praised “Rose’s singing and stroke[ed] her arm” as “Rose continu[ed] to pat” (Bruscia 50).

In another one of her sessions, Rose was more involved and didn’t pat. One of the songs the therapist sang and played was “Oif’n Pripetshik.” Rose sang “throughout this song on ‘la’ in long, expressive phrases” with “extended moments of musical connection that last[ed] for as long as 34 seconds” (Bruscia 50). In general Rose seemed “to respond to the accents, dynamics, strum patterns, and articulations of the music by the quality of and patterns of” her pats (Bruscia 51). Furthermore, “even when Rose was not responding by singing, it was evident that she was aware of the music and would respond to the changes in the sound” (Bruscia 51).

Both Receptive and Active Music Therapy Example

Artist and Student Deepa Rajan’s Study Deepa Rajan's interest in music therapy for people with Alzheimer’s began when she volunteered at a nursing home by playing songs. She began playing music from artists like Taylor Swift and Coldplay with little audience engagement. One day, she decided to play older songs like “This Land is Your Land” and saw a dramatic change. She explains, “people who could not even remember the names of their sons and their daughters could suddenly remember all of the lyrics to a song they had not heard in decades” (Rajan). This change made her embark on a clinical study, under the mentorship of a licensed music therapist, to see how different types of music therapy improved the cognition of

people with Alzhiemer's disease. Over the following 10 weeks she performed live with other student musicians at a local nursing home where her "patient population was divided into three groups: the active musical task group, the receptive musical task group, and the combination group" (Rajan). Deepa would do the Mini Mental State Examination before and after each session to measure different aspects of cognition like orientation, recall, and language. The Mini Mental State Examination is a "30-point test used to measure thinking ability" which is the most common way of "assessing dementia" ("Mini-Mental State Exam"). Her results concluded that the active musical task group had the most improvements on the majority of the aspects of cognition. Since most of her patients were in the middle to late stages of Alzheimer's disease, active music therapy benefited them the most as it broke their cycle of inactivity (Rajan). It revitalized them.

Hormones and Neurotransmitters Study

A deeper look into the effects of music therapy show the impact at a hormonal level. A study was conducted to "assess the effects of a music therapy intervention on concentrations of melatonin, norepinephrine, epinephrine, serotonin, and prolactin in the blood of a group of patients with Alzheimer's disease" (Kumar et al.). The patients "blood samples were obtained before initiating the therapy, immediately at the end of 4 weeks of music therapy sessions, and at the 6 weeks follow-up after cessation of the sessions" (Kumar et al.). The patients met with music therapists "5 times per week for 4 weeks" in the morning for less than an hour (Kumar et al.). Most had some agitated behavior, and none were taking medication that could affect the hormones and/or neurotransmitters systems. The sessions included "instrumental playing with singing as well as playing of handheld flat drums using either hands or mallets" as well as an

"opening song incorporating the names of the patients and an ending sting to provide consistent opening and closing to the sessions" (Kumar et al.). At the end of the study, the researchers found that: "Melatonin concentration in serum increased significantly after music therapy and was found to increase further at 6 weeks follow-up. A significant increase was found between baseline values and data recorded after the music therapy sessions as well as at 6 weeks follow-up." (Kumar et al.). The "increased levels of melatonin…may have contributed to patients' relaxed and calm mood" (Kumar et al.).

EFFECTS OF MUSIC THERAPY ON CAREGIVERS

It's no secret that "taking care of non-self-sufficient people such as those with dementia causes distress" (Raggi et al.). Raggi et al. found that "higher cognitive, psychological, behavioral, and motor impairment of patients with Alzheimer's disease are associated with increasing levels of burden and distress in their caregivers, who need to adopt adequate coping strategies and to seek for familial and social support".

Music therapy can have positive repercussions on the caregivers. If the patient is calmer and more alert, the caregiver can also relax a bit. It can reduce "anxiety and distress, lightening the mood, and providing a way to connect with loved ones…especially those who have difficulty communicating" (Graff-Radford). Furthermore, "agitation occurs in up to 90% of individuals with Alzheimer's disease" (Cox et al. 518). If the caregiver is aware of the songs or musical strategies that can stop the agitation and prevent aggression, then they can maintain some control in the situation to ensure their safety (Kumar et al.; Cox et al. 522). The music may also provide a sense of emotional normalcy in the relationship if the caregiver is a family member. When

patients “stop showing affection to others” a song might elicit a response to dance and “they may move closer to others or make affectionate gestures” (Harper).

MUSIC THERAPY VS. TRADITIONAL MEDICATION

Alzheimer’s disease has no cure. Music therapy and other forms of treatment only slow down the inevitable and improve quality of life. The traditional form of treatment for patients with Alzhiemer’s disease is medication. Currently the “U.S. Food and Drug Administration (FDA) has approved two types of medications - cholinesterase inhibitors and memantine - to treat the cognitive symptoms…of Alzheimer’s disease” (“Medication for Memory”). The first type “are prescribed for mild to moderate Alzheimer’s disease” (“How Is Alzheimer’s Disease Treated?”). They delay “symptoms related to memory, thinking, language, judgement and other thought processes” (“Medication for Memory”). But, “people with certain types of cardiac arrhythmias shouldn’t take” them (Mayo Clinic Staff). Some of the side effects include “nausea, vomiting and diarrhea” (Mayo Clinic Staff). The second medication, memantine, “is prescribed to treat moderate to severe Alzheimer’s disease” (“How Is Alzheimer’s Disease Treated?”). It is “prescribed to improve memory, attention, reason, language and the ability to perform simple tasks” (“Medication for Memory”). The side effects of this one include “dizziness, headache, confusion and agitation” (Mayo Clinic Staff). In some cases, a person may benefit from taking both at the same time. Other medicines like “sleep aids, anti-anxiety drugs, anticonvulsants, and antipsychotics” should be taken as a last resort because of the side effects (“How Is Alzheimer’s Disease Treated?”). For example, sleep aids “make the person more confused and more likely to fall,” and antipsychotics can increase the “risk of death in some older people with dementia” (“How is Alzheimer's Disease Treated?”). Though these medications can be helpful to a certain

degree, they have "not provided wholly effective management of behavioral symptoms" (Cox et al. 518).

Authors Darnley-Smith and Patey write in their music therapy book that "music can be an immediate form of expression where words cannot be found or seem too dangerous, such as when intense anger or rage is being experienced by the client" (40). Furthermore since music therapy has successfully reduced agitated behavior in patients,

> the significant resultant reduction in pacing /aimless wandering and general restlessness following the intervention may also contribute to improvements in the physical safety of participants. A reduction in these behaviours may lead to a reduced risk of falls and fatigue in residential care, particularly in residents with significant cognitive impairment. This is a noteworthy benefit, which may support initiatives to reduce the use of physical or chemical restraint. (Cox et al. 523)

Having interventions like these are "inexpensive because [they] could be provided by amateur musicians (such as volunteers, staff, students or visitors) to enhance the accessibility and to reduce the cost associated with employing professional musicians" (Cox et al. 523). Music therapy is also "flexible, non-invasive, and non-disruptive to other residents or the daily routine of the facility" if in a nursing home (Cox et al. 523). If possible, "one-to-one intervention can also reduce barriers that prevent residents with disruptive or wandering behaviours from accessing other musical activities (such as group sing-a-longs or concerts)" (Cox et al. 523). Finally,

> participation of Alzheimer's disease patients in active music making may serve as a resource for long-term economic benefit for society and for patients, improving quality of life by providing social benefits in interacting with others, altering abnormal and

disruptive behaviors, and minimizing the need for tranquilizing medication. (Kumar et al.)

CONCLUSION

For Alzheimer's disease patients, music might be the only way they can hold a piece of who they are before the disease takes it away. Although some memory loss is normal with aging, Alzheimer's disease is not. With the loss of synaptic connections and the death of neurons, a person's memories begin to disappear. As it progresses to the late stage the person might require intensive care as they may experience trouble communicating and their physical abilities change.

Research has found that there's a specific area in the brain that stores memories by linking them to familiar songs and the emotions associated with those memories. Furthermore, other studies show that memories built through music are more resilient to neurodegenerative influences. Patients with Alzheimer's disease will most likely remember those memories linked to music if they are being triggered. Additionally, research supports music's power to influence our mood and state of mind. A fast tempo can alert a listener and also elicit excitement. While a slow tempo can calm a listener. This is the foundation for the two types of music therapy: active and receptive. Active music therapy engages the patient to perform. Receptive music therapy, on the other hand, aims to relax the patient. The impact it has can be seen in the patient's body language, their self-esteem, self-expression, engagement with others, and even on a hormonal level. These positive changes aren't limited to the patient receiving the therapy. They can also be experienced by the caregiver. Research shows that if the patient with Alzheimer's disease is more agitated, then so will the caregiver. So if the patient is calmer, the caregiver will be too. Plus, it's helpful to know what music can calm a person and which can break a cycle of

inactivity to improve quality of life instead of resorting to medication. While medication can treat cognitive symptoms, music therapy is a more holistic approach that isn't limited to behavioral management. Furthermore, traditional medication can't trigger memories.

More research is needed to further solidify music therapy's effectiveness. I believe that therapy has to continue to be destigmatized first in order for the public to fully accept music therapy as a viable alternative to medication when not truly needed. A sole career in music, or let alone a major in music, is for the most part not taken seriously in our society despite how powerful music really is. It "functions as a bridge between the past and the present" (Bruscia 31). Some therapists say "humans are musical beings" (Darnley-Smith and Patey 16). Music is the one thing that connects all human beings on Earth as every culture has it. One doesn't need to enroll in a music therapy program to reap the benefits music has to offer. We can see it everyday, even in the smallest of situations because music is so intertwined with our daily lives. For example,

> A mother may relate an anecdote of her unborn baby responding to music in the womb. Parents frequently relate the power of their non-verbal and essentially musical relationship with a new-born child. Others will speak of listening to music at the end of a stressful day or during a car journey. Many will talk about the importance of particular music that evokes either painful or joyful memories, from a time of being bereaved, or a time of being in love. (Darnley-Smith and Patey 16)

If anything, caregivers and medical professionals should remember the value of music through all stages of life. It might be the only tool we have to reconnect with someone who is slowly disappearing. While some parts of a person may be lost, music is immortal and the

connections a person makes with it stay alive longer. Even if access to a music therapy program isn't available, playing music through a radio, smart device, or in person can have a bigger impact than not playing music at all. 30 minutes of music can be the highlight of someone's day, reminding them that they are still alive. The lyrics of part three of composer Robert S. Cohen and librettist Herschel Garfein's three-movement work *Alzheimer's Stories*, plays it simply:

> Find those you love in the dark and light.
>
> Help them through the days and nights.
>
> Keep faith. They sense what they cannot show.
>
> Love and music are the last things to go.
>
> Sing anything. (qtd. In Cutsforth-Huber 45, 47).

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