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Pool-based Dance/Movement Therapy with an elder Population: A Literature Review

Capstone Thesis

Lesley University

May 5, 2022

Jabyn Cleere

Dance/Movement Therapy

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Abstract

Dance/Movement Therapy (DMT) is used widely with elders, yet little is known about the sub-field of pool-based therapy. Specific practices in DMT with elders appear in the literature with groups and individuals and uses of props that support issues of balance. While pool-based DMT literature is limited, there is a body of knowledge in related fields that tie closely to the idea of this approach. While implementing treatment in a pool setting may be limiting due to fears or ability, the literature review revealed that using pool DMT would benefit elderly health. Benefits to physical aspects such as balance, muscular strength, gait variability, flexibility, and addressing issues of cognition are some of the areas that can be considered in pool-based DMT.

Keywords: Dance/Movement Therapy, Dementia, elders, pool, water therapy

Pool-based Dance/Movement Therapy with Elders

Introduction

Dance/Movement Therapy can benefit any age, but with the human lifespan getting longer in each generation, there are more individuals living to become elders. In the United States Middle East and North America (MENA) report the chief of the Census Bureau's population estimates branch, Dr. Luke Rogers, was interviewed about the increase of the elder population from 2010 to 2011. Through their statistical findings they noticed a drastic growth of 65-year-olds from the one year to the next, and share that "since then, there's been a rapid increase in the size of the 65-and-older population, which grew by over a third since 2010. No other age group saw such a fast increase" (United States MENA report, 2020). This big gap noticed in one year can only start to predict the following years growth of the elderly population and predictions of the future generational cohorts.

With the increased population of elders, the ratio of resources to individuals is lacking and creates demand for these resources of mental health and physical health. The view of elders has become something of a running joke to some and a concern to others. As mentioned by Seabrook, "Today, although the old are present in increasing numbers, they nevertheless suffer a different kind of invisibility. They have become part of the landscape, obstacles on the sidewalk, impediments to the accelerating tempo of life, delaying the swiftly moving crowds in their urgent forward movement" (Seabrook, 2003, p. 1). Some definitions for an elder age vary depending on location. Such as the view of Thailand's elders:

In many societies, the authority and prestige of elders were often unlimited. In Thailand, traditional law stated that wives and children were liable for the commission of crimes by the (senior, male) head of the family (Seabrook, p. 3).

The view of elderly in Africa:

In Africa, where rural, clan-based societies bestowed social and religious knowledge on elders, and where the main productive resource – land – was controlled by them, these patterns were first disrupted by colonialism (Seabrook, p. 4).

And the view from other perspectives:

The assumption is that age and the elderly are valued in eastern cultures, or in stable, primitive societies, and only in western cultures are children exposed to negative attitudes toward age (Seefeldt, 1990, p. 2).

Some authors are addressing inconsistencies with how society defines elderly, aging or old. Seabrook mentioned a good point regarding the definition of old or elderly. “In any case, even definitions of the elderly are changing. Old age is not a chronological given, although for the purposes of the administration of social benefits it may be necessary to impose it” (Seabrook, 2003, p. 10). The same author also highlighted that although there is an age difference, we are similar in certain ways, for example, “emotions do not change, despite appearances. The most common complaint of older people is that they are patronised, infantilised or ignored” (Seabrook, 2003, p. 16). According to the Merriam-Webster dictionary definition and for the purposes of this paper the term ‘elderly’ will be as follows, “rather old, being past middle age, and of relating to, or characteristic of later in life or elderly persons” (n.d.a.).

Land is a constant holder in people’s lives, a supporting surface below the feet and holding weight. When individuals are born, the experience of life starts with exploration of the world through groundwork and gaining muscle to support the self in the space. As the person grows older and becomes more able to explore the surrounding areas of space, they shift into a new identity of explorers and confident movers. Although adults become confident in moving

the space around them, elderly individuals are less confident. The elder's confidence may stem from an autonomy perspective of not being 'able' enough. "Health care providers should discuss fall prevention with their patients because approximately half of older adults who fall do not discuss it with their health care provider, often because they fear this will lead to a loss of independence" (Bergen, 2016, p. 12). This population sees the ground as something to be wary of as they are prone to accidents that then lead to a variety of health issues. The ground for elders is not supportive and becomes a place of instability, like a moving wave, and creates fear. Fear of falling is a common mental health issue in elderly because the recovery from falls or other physical ailments are considerably difficult and take longer to heal. According to Shu and Shu, "worldwide, falls are a leading cause of unintentional injuries in adults older than 65 years old, with 37.3 million falls requiring medical attention and 646,000 resulting in deaths annually" (2021, p. 2). Along with the fatality aspect of falling there are other factors to take into consideration when looking at the elders' risks to health in falling. This was also highlighted in Carlucci's article, "psychological factors (fear of falling) and physiological factors (poor gait and balance) are independent risk factors for falls; however, both need to be addressed in fall prevention" (Carlucci, 2018, p. 1).

Traditionally, during the healing process the individual is recommended a lessening of mobility to increase the healing rate. While in some cases, this is important and unavoidable, issues of immobility can compound the physical health of an elder, as well as their sense of well-being and vitality. Vellas mentioned that there could be more to this fear that is presented in elderly, for instance, "some elderly persons develop symptoms or behaviours in response to a fall, regardless of physical trauma. They may express an enhanced or increased fear of falling that may result in deleterious emotional, psychological or social changes" (Vellas, 1997, p. 1).

Dance/Movement therapists hold their movement sessions in spacious areas on level ground, but what if the session was transferred to a water setting? This therapy is applied in numerous settings, but it is not often transferred to a pool setting unless it is for aquatic therapy which differs in approach and goals. In researching studies on this topic, I was faced with the question of why is there extraordinarily little literature covering this form of therapy in the pool setting?

In finding the resources for this field of study there was focus on specific keywords used for a string search of the existing literature: Alzheimer's Disease, aqua, aquatic, arts-based, balance, dance/movement therapy, Dementia, elders, hydrotherapy, pool, water aerobics, water-based, and water therapy. In using the above string search, I included the following with and/or: Geriatric, balance, aerobic, and disorders of elderly. To start the process the specific word search in what databases used was, 'Dance/Movement Therapy in a pool.' The word search included the words and/or to bring out different articles that included or excluded both topics together. This one sentence, albeit very specific, had few results that covered this topic. The search was expanded with words such as aerobic exercises, water benefits on body, Dance/Movement Therapy with elders, pool activities. In my search for articles and information I utilized a variety of web-based searches such as google, scholar, Bing. I also utilized a range of library resources and databases such as EPSCO, library archives, and personal communication by interviewing a Dance/Movement Therapist named Vonie Stillson who practices pool DMT professionally.

I reviewed articles written in the English language since it was my primary language. Although many articles were gleaned from the general searches, they focused on either water therapy or DMT, but many of them did not merge these two fields into my specific topic. For example, I found an article from the Aquatic Therapy & Rehab Institute (ATRI) website that

focused on aquatic therapy but did not include anything about DMT. In contrast, I also found specific research by Filar-Mierzwa (2017) that focused on the influences of DMT but did not illuminate anything related to aquatic or pool settings. After my interview with Vonié Stillson, additional resources were shared that allowed for my research to get closer to my topic. In the additional resources, there were two student theses, both from Naropa University, which combined both topics of DMT and pool setting in one paper. While these two articles cover the topic directly, the other resources had not explicitly stated anything close to the research. The workaround for not finding research in that specific niche was to get close to the main points of this topic with the surrounding research. In the string search, there were complimentary articles that praised the use of DMT and the benefits of the therapy with an elderly population (Sollitto, 2018). While the studies found did not show much bias, there were limitations that could have been improved upon. Within that literature, some of studies had struggled with getting a large sample size of participants or consistent data collection due to attrition rates. Hwang and Braun's (2015) review of current assessments mentions this situation as, "common reasons for the demise of interventions related to physical activity for older adults are poor adherence and high dropout rates" (p. 3). Although there was an issue with the sample size they were on top of the results with assessments and tests to show how the results compare to other results. A finding reflecting this showed that:

Every study except for one showed an improvement in a measure of physical health among older adults. Except for body composition, improvements were seen for 60% to 90% of measurements in the other categories of physical health measurement—flexibility, muscular strength and endurance, balance, cardiovascular endurance, and cognitive function (Hwang & Braun, 2015, p. 6).

Tracking research progress accumulated by creating a before, during, and after artwork piece of the thesis creation process. The artworks had different formats and structures such as word cloud art and sketches based on quotations made during the process. These art reflections helped in my understanding of the research and gave answers to the question of whether the use of a pool would benefit elders, along with exploring any comparisons of DMT with aquatic therapy.

In the process of expanding the search to gain further knowledge on current literature, a body of valuable information opened the review for a more expansive and deepened inquiry.

Five theses, seven informative peer-reviewed articles, and eight studies provided data to support current research on Parkinson's Disease, Alzheimer's Disease, and other cognitive disorders relating to the elderly population. Literature that appeared vague and short were excluded from references because they did not contribute reliable information to the overall research question. The number of articles used in the research exceeded my expectation on targeting the variety of nuances to this topic. When looking at DMT there were different studies that research-specific aspects such as population, demographics, assessments, theories, and more. Researching the specific population yielded a wide and varied pool of literature, and some were unrelated topics that did not fit the purpose of this review. An example of this would be how different studies for elders appeared in different expressive therapies specializations, or studies that focused too heavily on the anatomical aspect of the population.

I kept the literature organized in assigned folders on the various themes within the topic. I also kept a visual art journal of my overall process, where I was able to connect and track how I am processing the information from the studies and the emotions I felt before, during, and after writing.

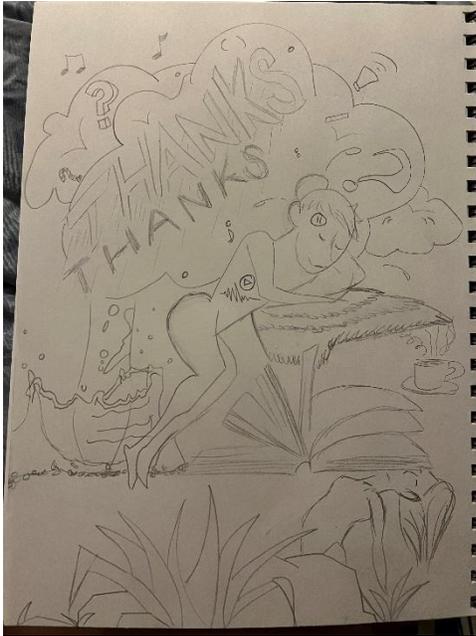
Figure 1**Image of feelings after research**

Figure 1 was created after the research was gathered, such as the peer-reviewed articles, to draft the thesis. In reflecting my emotional state after collecting the research, this expressive drawing gave me a way to look at the literature from a unique perspective. The reflection from the drawing was on how the literature impacted me and impacted the DMT world. Using art to reflect my search review process gave me insight into how I felt during the process while being able to notice which pieces of information stuck out to me. I created art rather than movement to show more emotional outputs as the review progressed. The aspects of the imagery such as the flowers show my growth in understanding and the water splash signifies how this pool-based DMT will shape my future practices.

Anticipated Outcome

Using a literature review brings more knowledge to an already known field of work but from a distinct perspective. This research is intended to build a theoretical foundation and start a

dialogue in the field on whether the idea and premise of a pool-based setting is appropriate for the population and dependable in practice. Understanding the complexity of this topic will inform the field of mental health about how DMT can benefit this population, with a specific lens towards water-based applications. Research for this literature review will contribute to the future pool of knowledge, address the gap in knowledge in this specific topic, and create awareness in the continuous field of DMT for new innovative ideas and inspiration for others to create new ways to incorporate these techniques.

Literature Review

Historical Contexts

Falling and fear of falling is a well-documented topic in the scholarly discussion. As mentioned by Carlucci (2018), the fear of falling can change the negative view of self with a positive approach like dancing:

Empirically tested fall prevention programs tend to focus on reducing fears associated with falling, yet the burgeoning field of positive psychology suggests that reducing negative emotions (e.g., fear) is not the same as cultivating positive emotions (e.g., joy; Siegal, 2014). Dance-inspired methods provide a possibly more joyful, alternative fall-prevention intervention to conventional exercise (p. 2).

As reported by National Institute of Aging Scientists (NIA) (2017), “if you fall, you could break a bone, like thousands of older men and women do each year. For older people, a break can be the start of more serious problems, such as a trip to the hospital, injury, or even disability” (p. 1). With a fall becoming more serious with age it is no wonder there is a lingering fear associated and a lower emotional and physical state of being.

Dance/Movement Therapy (DMT) is defined by the American Dance Therapy Association (2020) as “the psychotherapeutic use of movement to promote emotional, social, cognitive and physical integration of the individual” (p. 1). DMT applies to a plethora of issues, different populations, and with any age groups from newborns to centenarians. Considering what population was first exposed to DMT, I can assume that elders have been involved in this modality for a while. Marian Chace, founder of DMT, had begun research in the field with hospitalized psychiatric patients. The beginning of Chace’s research in 2004 was completed in clinical settings. Chace’s 2004 work was stated as according to Koch & Bräuninger, “specifically supported DMT treatment for oncology patients, fibromyalgia patients, and persons suffering from stress and psychological strain. Most subjects were women, limiting generalizability” (2005, p. 1). The specialization of age groups may have started when the research began for the field. The oldest study I found was labeled to be from 1993. It focused on older people with cognitive deficits and the increase in functional abilities due to the dancing. The information of DMT had dispersed at conferences via presentations, research posters, or workshops. Along with treating the elderly individuals, DMT created frameworks and techniques to connect with the individual in the year 1916. The techniques started with Trudi Schoop who combined comedy and dance therapy. The next technique to be designed was by Mary Whitehouse whose technique was called authentic movement. After these techniques were applied for approximately fifteen years, the American Dance Therapy Association was created and found where dance movement therapists could convene and share their knowledge and techniques with other fellow Dance/Movement therapists. At one point, mirroring, movement metaphors, jumping rhythms, and empathy/sympathy were included in the theories created.

Current Contexts

According to the Merriam-Webster dictionary (n.d.b), risk factors are defined as “something that increases risk or susceptibility” There are plenty of risk factors that contribute to elders falling with a result in injuries. The CDC lists many factors that create an environment perfect for falling.

Lower body weakness, vitamin D deficiency, difficulties with walking and balance, use of medicines (such as tranquilizers, sedatives, or antidepressants), vision problems, foot pain or poor footwear, and home hazards (broken or uneven steps and/or throw rugs and clutter) (Centers for Disease Control and Prevention, 2021, p. 1).

With how common these factors show up elders have many aspects to try and control to create a safe environment for themselves, without having a high concern with other factors of life bearing down on them. “In short, the main problems of the elderly are: health problems, financial problems, poverty, addiction, social exclusion, retirement, the ageism, abuse” (Stanciu, 2012, p. 3). Even though falls are tough to recover from, some falls may be more detrimental than others. As reported by the World Health Organization (2021b), “adults older than 60 years of age suffer the greatest number of fatal falls” (p. 1). DMT applies for different populations but elders, who are at a higher risk of falls, can benefit from this form of therapy. Elders have struggled with balance, strength, depression, isolation, and chronic disease. DMT, for elders, on land without a stable item for assistance in balance may create a bit of hesitancy and fear in these clients. In response to what was learned from the literature the fear of falling in elders may go away if there is better support for them, such as a body of water supporting the limbs and weight of an elder. Since falls are their main concern, then taking away that factor of fear would improve the mentality of movement in this focused population. Along with elders aging and losing friends as time passes, there becomes a hesitancy to socialize and go through the process of making new

connections all over again. Along with aging there is the constant and looming thought of mortality that may cross their mind. At the mortality life benchmark, they are faced with the fact of death and reflect on their life. The exploration of DMT in a pool setting is a wonderful way to start changing these fears and concerns into courage and safety. There are a multitude of distinct types of water-based exercises from simpler activities such as Marco Polo to more complex activities like water aerobics (Thrillspire, 2021, p. 4). Each of these activities create physical exertion and fuels creativity. Having more information and resources about this form of DMT can benefit those with fall risk and fall fears. The expressive art forms such as dance, art, music, etcetera, benefit elders by stimulating the mind, sense of competence, self-esteem, improve blood flow, and increase cognitive function. The most recent studies were partially successful in addressing the two subjects together. Studies had covered a great amount of DMT or water-based exercises but not both in the same literature. To me this would show a fifty-fifty percent success in covering the topic. There were some articles, such as the ATRI articles, which met the thesis topic halfway which had covered tremendous information regarding aquatic therapy benefits and downfalls. Aquatic therapy is considered the closest to the main idea of this thesis which asks the question, would DMT translate well to the pool setting? These articles along with the two theses covering the topic would be the closest to being successful. The other articles and studies had proven points of the thesis such as impact of DMT on elderly and dance impact for balance, fall prevention, and dizziness. Each study had positive points for overall proof and touched on each important aspect of research which is cognitive, emotional, physical impacts of elder population. After reviewing different articles for this topic such as quantitative studies, qualitative studies, and literature there were various resources that relate closely to the topic of DMT in a pool setting.

Exercises like workouts focus on the physical aspect of an individual, therapy focuses on the mental and emotional aspects of an individual, and extracurricular activities focus on creativity. The general western society practices these aspects separately of exercise, therapy, and creativity through specific life experiences, but what service implements all of them together? Noticing the rise in mental health problems and physical issues the population experiences there needs to be a service that works on the physical, cognitive, mental, emotional, and overall health of the individuals. According to Sollitto (2018), “many medical conditions can be improved through physical exercise, including Alzheimer’s disease, other forms of dementia, heart disease, diabetes, constipation, high blood pressure and obesity” (p. 2). Movement can contribute to greater mental health. In a study conducted by, Lautenschlager and colleagues (2004), valuable information was revealed in areas of physical activity towards depression symptoms. “Physical activity (PA) is often seen as an intervention that has the potential of decreasing the burden associated with depression and cognitive impairment in later life” (Lautenschlager, p. 1). “In addition, older adults who expend larger amounts of energy daily (walking, gardening and exercise) are more likely to have optimal function in their activities of daily living (ADL)” (Lautenschlager, p. 3).

Inclusion of Dance/Movement Therapy and Pool Therapy

Dance/Movement Therapy uses the movement of a client to delve deeper into emotions that may not come out during talk therapy. Movement can be performed in any space that allows the body to reach and stretch or become taut and compressed. In noticing that movement can be completed anywhere it is no surprise to see individuals moving in a water-based setting such as a pool. The pool-based setting has instilled safeguards for the elder population which can bring comfortability in sessions and safety. There are fundamental issues that come from growing

older such as “balance issues, cognitive decline, muscular decline, and emotional health” (Shuani, 2020, p. 2). There is specific form of therapy that moves the body but does not focus on emotional exploration and instead focuses on the physicality of a body. Howard (2016) states, “overall benefits of aquatic therapy include improving balance, coordination, weight bearing, muscular endurance, muscular strength, cardiovascular and pulmonary endurance, pain management, motor skills, motor control, psycho-social, range of motion, and circulatory function” (p. 4). Aquatic therapy in literature can provide a good basis for how movement in a pool setting can benefit a person.

There are multiple benefits from aquatic therapy:

Patients with the following issues would greatly benefit from aquatic therapy: sensory disorders, limited range of motion, weakness, incoordination, pain, spasticity, perceptual and spatial problems, balance deficits, joint replacements, orthopedic injuries or trauma, obesity, prenatal, neurological, osteoporosis, arthritis and fibromyalgia, respiratory problems, circulatory insufficiency, inadequate oral facial control, depression and poor self-esteem, cardiac disease, and motor skills deficiencies (Howard, 2016, p. 4).

Overarching Themes in DMT

There were a group of DMT studies that connected overarching themes. They included exploring the various DMT techniques such as mirroring and authentic movement along with topics that focus on elders’ health, impact of water on the body, impacts on mental health, and the struggles that the elder population faced. The common theme and string of searches included aspects of the studies from the title such as anything to do with water, about elder population, or about a form of DMT or overall health.

Current Theoretical Orientations

The treatment and approach to this population has changed with the societal trends. Noticing those trends is important and vital for further investigations of the topic. For example, one major trend is that life span ages are becoming older. With crowds of individuals reaching older ages there is a growth in the elder population. According to the United States Census Bureau 2020, “the 65-and-older population grew by over a third (34.2% or 13,787,044) during the past decade, and by 3.2% (1,688,924) from 2018 to 2019” (p. 1). Although the growth in this population has fluctuated each year, the mentality surrounding them has not changed and has continued to focus more on the negatives rather than the positives. As stated in Stanciu’s article (2012), “public opinion in general about enabling older people to work, is that older people are less competent than younger, they cannot learn new things that they take more time off for health reasons, they are more expensive for an employer” (p. 11). Along with this societal view of ineptitude of this age group they are bombarded with aspects of their livelihood such as ageism, stereotypes, statements, infantilization, culture influences, misconceptions, and power dynamic that are being perpetuated continuously, especially in Western culture, to inflict societal importance of being old versus being ‘young.’ These aspects diminish the identity of elders and “does not acknowledge the vast diversity among older adults” (Dionigi, 2015, p. 1). Mentioned by Stanciu (2012), “stereotypes about the elderly contain negative aspects, regardless of the age group of those who perceive such. However, the most common and most negative stereotypes are the adopted children and adolescents, but this age may manifest differently” (p. 10 and 11). As Stanciu mentioned the dominant age group that perpetuates this view on elderly the solution was to have the youth be raise in an environment that promotes positive thinking and views on elderly rather than a critical one.

The current state of treatment for elders is growth in geriatric research and continued articles stating diverse ways this population can contribute to their community along with self-care and growth. The research of the past has focused on the physical health of elders and partly recently focused on mental health. If the elders are struggling with physical impairments, then there is research that focuses on those aspects like muscle training or balance training. If the elders struggle with cognitive impairments, there are theories and techniques used to help with them such as the quick dementia rating system (QDRS), dementia screening indicator, mini-cog assessment, and so on. These assessments can change and vary depending on a number of factors like demographics, language, and setting. There are a host of activities, therapies, exercises, and services for this population but at the same time, there is a prevailing dynamic in treating this population that is limiting and undervaluing in philosophy for treatment. This leads to the question of what can this population gain from DMT that they cannot get elsewhere in current treatment practices.

Supportive Research for a Pool-based Approach

The treatment options for elderly involve targeting the balance issues along with cognitive decline or cognitive disorders that appear due to aging. The articles covering DMT interventions seem to improve balance or prevent cognitive disorders. Hwang & Braun (2015) concluded, “the findings suggest that dance, regardless of its style, can significantly improve muscular strength and endurance, balance, and other aspects of functional fitness in older adults” (2015, p. 1). One of the most informative and major sources yields from the literature written by Howard (2016) with the many physical benefits from water on the body and how it improves the health of an individual. Their articles are very supportive to the innovative approach of pool-based DMT and overall health improvements. This is shown when Howard (2016) mentions how

buoyancy of the body in water can alleviate stress on joints since there is less percent of body weight bearing down on the person due to gravity.

Buoyancy of the human body in water:

An individual waist deep in water may experience only 50 percent of their weight. A person chest deep in water experiences only 25 to 30 percent of their body weight, and neck deep submersion equates to one experiencing only about 10 percent of their weight (Howard, 2016, p. 8).

The benefits of pool therapy:

Along with helping with balance concerns, pool therapy has other benefits on the body such as when the water temperature is changed. Depending on the temperature of the water the effects to the body may focus on elasticity and range of motion. In the low environment of water, the body may stretch in positions it cannot while under the influence of normal gravity on land and for much longer periods of time (Howard, 2016, p. 50).

Considering that the body dynamic can change based on water temperature awareness of bodily needs is important for the elderly population. There was more evidence suggesting that hot and cold-water impact how the swimmer/participant can react. Based on Alexiou (2014), “high water temperatures lead to tachycardia, a small change in arterial blood pressure, an increase in blood volume per minute, and a small increase in pulse volume. At low water temperatures, we have phenomena of hypoventilation, respiratory alkalosis CO₂ deficiency, and dyspnea, which result in the restriction of CO₂ expiration” (p. 5). The changes in the body range from internal to external symptoms, the ability to regulating heat, oxygen consumption, hormone and muscle systems, and somatic symptoms. .

Designs and Methods of Studies for DMT

Looking at the different studies that were gathered they each had distinctive designs and methods being applied to their research. Some of the studies were focused on the quantity of individuals being used in the study to gain a significant amount of data in one go. Other studies were about quality and had elimination conditions for those who participated in the study. There were other studies that showed the impact of DMT interventions and how the intervention improved health outcomes. Looking at the designs and methods we can tell how the research spanned out with techniques, results, and limitations.

Having all these studies to compare and contrast, it was intriguing to notice the many different assessments being used to gather their data, analyze the findings, and how well they presented the information for the readers. For example, in the Ricci (2016) study the data were gathered with the following results on assessments:

The control group was treated according to the Conventional Cawthorne & Cooksey protocol ($n = 40$), and the experimental group was submitted to a Multimodal Cawthorne & Cooksey protocol ($n = 42$). Measures included Dynamic Gait Index, fall history, hand grip strength, Time Up-and-Go Test, sit-to-stand test, multidirectional reach, and static balance tests (p. 1).

The Filar-Mierzwa (2017) study used the following assessments.

Pretest/posttests were completed using the Postural Stability Test, the Limits of Stability Test, and the Fall Risk Test M-CTSIB. Results showed the Limits of Stability Test was significantly higher (17.5%) after dance classes (p. 1).

The two studies above observed benefits of elders in the balance and gait aspect in their health. The data collected from the studies were analyzed by comparison via percentage overall or on

tables where there is visualization of data. The information is presented either numerically or self-documented by surveys. The other articles list the pros and cons of the studies such as physicality or cognitively. Others sometimes use a movement analysis assessment to notate the differences in data.

Towards an Integrated Approach of Physical Therapy and DMT

After reviewing the literature, new knowledge can be gained to improve the health of elderly population with support from research. Both DMT and physical therapy have similar body movement and intent for the client-for them to live in a less stressed state. If connections are made to the research themes and benefits, it could be assumed that this approach of DMT would be as beneficial as the other forms of therapy. The main purpose for looking at the surrounding resources is to find these connections and be able to apply them and take aspects of each to create an innovative approach. In doing so, future projects can be considered where theories from the literature review can be applied into research and practice to develop future models.

After looking at past contributions, it is important to consider the benefits of an interdisciplinary approach of DMT and physical therapy we notice the overlap of benefits such as improved muscular strength, balance, motor control, cardiorespiratory function, and flexibility. With the ever-growing modalities and concern for mental and physical health due to current events such as Covid-19 there is increased need for therapy or other resources to help with the backlash of events. The World Health Organization mentioned this in a recent post to their website.

In public mental health terms, the main psychological impact to date is elevated rates of stress or anxiety. But as new measures and impacts are introduced – especially quarantine

and its effects on many people's usual activities, routines or livelihoods – levels of loneliness, depression, harmful alcohol and drug use, and self-harm or suicidal behavior are also expected to rise (2021a, p. 1).

Although traditional talk therapy is beneficial to elders, the expressive therapies have gotten more popular with aging individuals. Although the previous literature highlights majority DMT, there are other modalities that are beneficial for elders to incorporate into their lifestyle. Fisher and Specht (1999) examined the meaning of creativity as it relates to aging. Results showed that, “they [the researchers] found that creative activity 'contributes to successful aging by fostering a sense of competence, purpose and growth’” (p. 457). From the literature there is literature that continues to state the ability and competency concerns of elders. Noticing that reoccurring theme the inclusion of art making can bring back these feelings to the elderly. Stephenson mentioned in the (2014) study three elder women, Rose, Adeena, and Marcia, who explored their aging in the art modalities of painting, drawing, sculpting, and collaging (p. 3). The article mentioned the separate modalities of art for each person and how each one improves an aspect of the person such as confidence, paying homage to others, and identity. One barrier that could come up in these artistic interventions that may be limiting to the elders are health problems such as arthritis or chronic fatigue. Connecting this art intervention with the current DMT techniques can greatly increase the benefits and well-being of older individuals. The shift from talk to expressive therapies was mentioned even in 2005 by Malchiodi. She states that, “while talk is still the traditional method of exchange in therapy and counseling, practitioners of expressive therapies know that people also have different expressive styles— one individual may be more visual, another more tactile, and so forth” (Malchiodi, 2005, p. 1). Taking into consideration how there is a continuous need for mental health, contributing this form of therapy

can reach different elderly and aging clientele who may have had limited resources before and who may be from diverse cultural backgrounds and experiences. This approach could bridge the need for these clientele to experience DMT and other expressive therapies specializations and approaches into one group.

Some ideas for the future could include different forms of intervention to measure how effective pool-based DMT can be for populations. One idea that could be introduced is to collect a small to large group (5-10) of individuals in the elderly age range and have them be involved in a DMT session in a local pool setting with specific measurements and assessments provided before, during, and after the sessions. Based on the literature, the main focuses for this kind of community project would need to be addressing balance issues, fear of falling thought processes, stability, and grow self-confidence. Although these issues of health would be focused on for the project, it is important to reflect from the results of the review and the wide range of factors that affect elders' physical health such as the effects of medication, health issues like diabetes, and environmental obstacles. These other factors need to be considered when selecting participants for any possible projects informed by the literature reviewed. A pool-based treatment approach in DMT could therefore be designed for four weeks where the individuals receive pool-based interventions once or twice a week and participate in a 45-to-60-minute session. The session could hold the following format:

- Introduction and Check-ins (5 minutes)
- A grounding technique (10 minutes)
- The main activity (25 minutes)
- Discussion and reflection (10 minutes)
- Check out (5 minutes)

Having a consistent plan and layout of each session would diminish the possibility of skews in any data collected. There would also be a consideration of a control group that could become the baseline data for participants assigned to a non-DMT group, but another form of physical activity. In creating these kinds of studies that are informed from a theory-driven framework could be used to compare with the current research available and move knowledge of pool-based interventions towards a possible treatment approach.

Discussion

Through the accumulation of current research and literature, this specific population of elders were seen becoming gradually larger and increasing with each new generation. This was highlighted in the essay conducted by Stanciu (2012). In reading the articles and studies there is potential for this form of therapy to be transferred to a pool setting for this age group. Although there were mentionable potentials from studying this population from a water-based approach, some deterrents such as the health and safety issues arose from the literature. This is illuminated within the Shuani (2020) study which targeted falling concerns in elderly. Addressing this topic and the lack of literature on it brought to light issues of practicality, ethics, and the development and age of the field of DMT, as related to other more predominant and well-established fields such as physical therapy, and aquatic therapy approaches.

For a practicing DMT pool-based therapist there are certain recommendations that ought to be instilled to have a thoroughly safe environment for clientele in the water such as certifications, training in first aid, and other knowledge on water safety. Because of these reasons, the literature revealed important needs and themes of program design such as taking a slow implementation of pool DMT through pre-pilot studies and small pilot studies.

Furthering research for this modality and having DMT pool-based community projects would strengthen the current literature and create future ideas for this field on this specific approach beyond using it with solely the elderly population. Other areas of this approach in DMT could explore rising health and wellness issues for professionals, issues related to aging and suicidality, and child autonomy. These following ideas were theorized while working at the West Texas Counseling and Guidance center internship site. The organization had a subgroup called the Zero Suicide Team that focused on suicidal individuals the ages of teen to young adolescence. With the focus solely on the young teens there were a few professionals included that I could see this pool-based DMT being implemented with. There is no certainty on how the public will respond to this approach to therapy. What needs to be known is how the public can benefit from the approach and integrate those themes into the future planned sessions through building on the existing body of knowledge. In creating this innovative approach to DMT with using a pool, awareness to the field will become more prevalent with the wider public and community in mental health. By learning about the ways in which aquatic therapy has benefitted individuals through the current research a starting point can be created for considering DMT pool-based therapy.

Exploring the potential benefits of DMT and physical therapy revealed some overlaps in themes in the literature, such as improved muscular strength, balance, motor control, cardiorespiratory function, and flexibility. In noticing these benefits in elders and comparing this information to the data from the United States Census Bureau on the rising numbers of aging individuals, it is apparent of the rising need and demand for alternative treatments in the elderly population (United States Census Bureau, 2020). The main characteristics that were gleaned from the literature were positivity in integration of DMT, positive and negative data collection,

under balanced number of participants in studies, and the number of measurements being used during the period of studies. Some of the recurrent themes and trends were on physical health and the changes in the balance of elders or the muscular changes after completing the session. Specifically, the study by Blandy (2015) mentioned this change in physical and emotional health.

There was a characteristic in the literature that revealed lifestyle such as life enjoyment from movement (Schechter, 2017, p. 2), overall focus on wellbeing (Seabrook, 2003), and the curiosity in adventuring into a new area of movement (Howard, 2016). Blandy (2015), Vellas (1997), Seabrook (2003), Dionigi (2015), Filar-Mierzwa (2017), Franco (2016), Hwang & Braun (2015), Koch (2005), Lautenschlager (2004), Ricci (2016), Schechter (2017), Stewart (2020), Templeton (1996), Bergen (2014), and Yaneff (2017). Each study contributed some new knowledge towards DMT and overall aging health from their articles. Howard mentions the many physical benefits from aquatic therapy. Seabrook mentioned the overcoming of fears that are commonly seen in elders. Filar-Mierzwa portrayed the impacts of different dance styles on the emotional and physical state of elderly. The common theme running through these studies is the almost complete improvement of health from using DMT, aquatic therapy, or another form of movement.

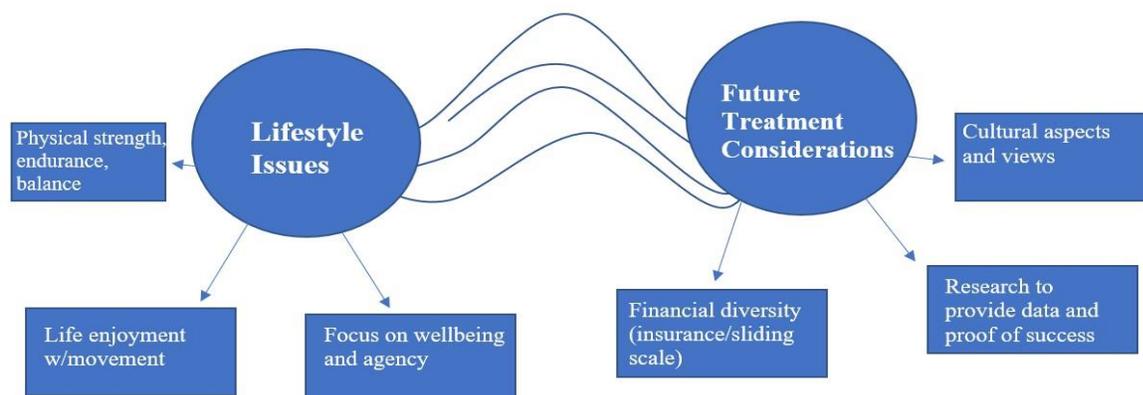
Another characteristic of the literature showed the range of the studies from two years old to 10 years old, illuminating the developmental stage the field is in, and the newness of this topic in DMT research.

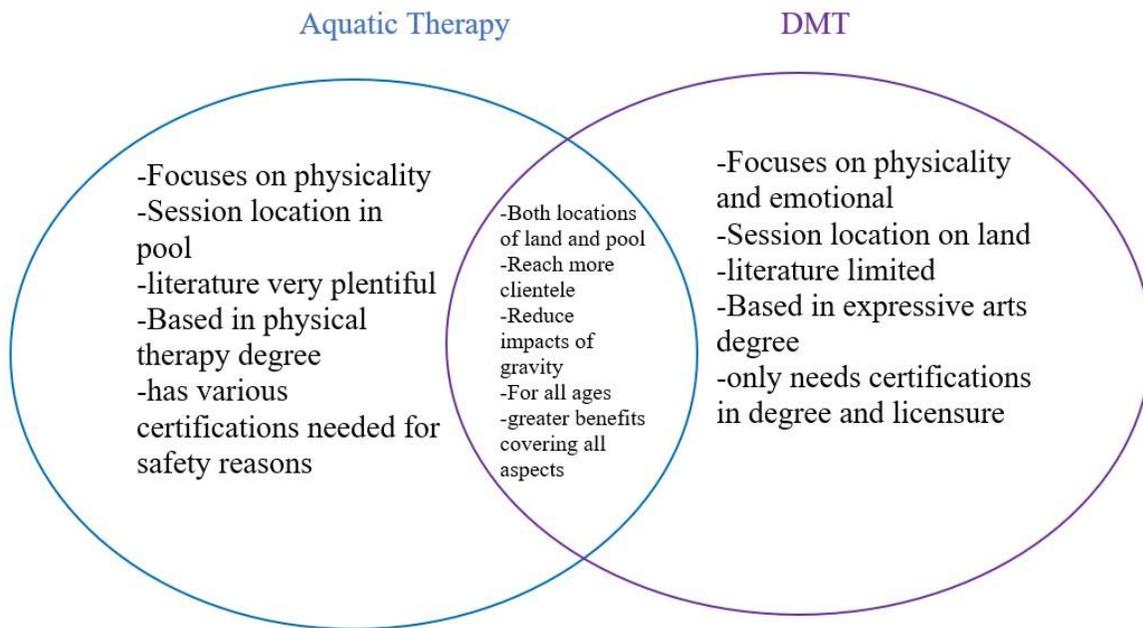
Although the focus of the research was on dance interventions, I included an article on the effects of music on the brain (Landau, 2018). For implementing DMT to future settings it would be important to include the informed use of music in the setting. As per the findings from the literature on music, brain, and movement (Blandy, 2015, Fisher and Specht, 1999, Jenkins,

2020, & Landau, 2018), adding this layer to the experience may enhance issues of balance and encourage new areas of movement and connections to moving for individuals receiving treatment. This is shown in the Schechter study, Bergen study, and the Shu study. These authors specifically delve into balance, artistic expression, and DMT. For example, a non-empirical video excerpt from 2020 showed an elder prima ballerina named Marta Gonzalez, who had developed Alzheimer’s Disease. Familiar music was played for her through headphones, and she responded with familiar embodied movement. Jenkins (2020) shared that, “through headphones, they played her part of ‘Swan Lake’ by Tchaikovsky. As she heard the familiar tune, her arms drifted up — almost by their own accord — and flowed slowly through the movements as if she had just performed that very day” (p. 4). The music connected her back to that period of time where she was prima and danced that position many a times. This shows the potential to research combined modalities of music and movement which may have a greater impact on mobility. Choices on whether or not to include music with a pool-based DMT approach could also have limitations and would need to be carefully considered. Issues of hearing and elders, for example would be one of those considerations. Taken together, the literature in this review showed several key components to consider integrating in a pool-based approach.

The figure below offers a theoretical framework that includes the major themes illuminated from the literature.

Figure 2



*Issues of Lifestyle to be Considered in Pool-based DMT & Themes in DMT***Figure 3**

The comparison and contrast between both services

Similarities of Aquatic therapy & DMT:

- Movement of body in space
- Enhance physical strengths
- Using gravity to advantage
- Led by a professional

Items to consider:

- Proper training
- Pool flotation items
- Health concerns (may affect environment, such as diabetes, pregnancy, etc.)
- The impact of staying in water too long (pruning effect)
- Age restrictions and health restrictions
- Phobias and or sensory needs
- Prop usage
- Proper attires
- The availability to certain populations
- Accessibility needs
- The cultural aspects of each
- Financial support (such as insurance usage)
- Credentials for the specific service

Conclusion

The objective for this review was to acknowledge the gap in the field of DMT and to notice the potential benefits of transferring this modality to a specific setting for a specific population. The research showed the benefits of using a pool to enhance individuals well-being through a mean different from the norm in DMT. Along with proving the benefits there are noticeable limits and concerns brought forth from the readings to consider when bringing this idea to life. To bring DMT to a pool setting, acknowledgements of the research around the field and in aquatic therapy need to occur first. Bringing alternatives for elders to choose from is needed considering the growth of the population in the future. The adding of pool-based DMT as a treatment of choice for the elder population shows promise, but also requires further research that builds on the literature and body of knowledge presented in this review.

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THESIS APPROVAL FORM

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Type of Project: Thesis

Title: Literature Review: Pool-Based Dance/Movement Therapy for Elders

Date of Graduation: May 21, 2022

In the judgment of the following signatory this thesis meets the academic standards that have been established for the above degree.

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