

Elizabethtown College

JayScholar

Occupational Therapy: Student Scholarship &
Creative Works

Occupational Therapy

Spring 2022

Positive Effects of Dance on the Older Adult Population: A Scoping Review

Christina Mercincavage

Follow this and additional works at: <https://jayscholar.etown.edu/otstu>



Part of the [Occupational Therapy Commons](#)

Occupational Therapy Honors in the Discipline

Positive Effects of Dance on the Older Adult Population: A Scoping Review

Christina Mercincavage

Faculty Advisor: *Erica Wentzel, OTD, OTR/L*

Erica Wentzel, OTD, OTR/L

04/30/2022

Signature

Date

Reviewed by: *Terri Reichley Dennehy, DEd, OTR/L*

Terri Reichley Dennehy, DEd., OTR/L **4/30/22**

Signature

Date



Reviewed by: *Gina Fox, OTD, OTR/L*

Gina Fox, OTD, OTR/L **4-27-22**

Signature

Date

Reviewed by: *Evan Smith, Ph.D.*

E. Smith

4/27/2022

Signature

Date

Reviewed by: *Suzanne Bieber-Grodzinski, MFA*

Suzanne E Bieber-Grodzinski **4/29/2022**

Signature

Date

Abstract

Background: Dancing is an activity that can be performed at any stage throughout a person's lifespan. As a person grows older, physical activity and exercise become more important as muscle mass decreases and bones become more brittle. These bodily changes may impact an older individual's ability to participate in physical activities and exercises they once were able to do. Dance is an occupation that offers a fun opportunity to increase a person's physical, cognitive, social, and emotional health. *Methods:* A scoping review examined the current research on the benefits of dance programs and classes for older adults and compared the benefits for adults ages 55-84 years versus adults ages 85 years and older. Methods included an extensive literature review resulting in the inclusion of 21 articles utilizing the following search terms: "Dance" AND "Geriatrics" OR "Older adults" OR "elderly." *Results:* Adults 55 and older may utilize dance to improve overall quality of life as it provides social interaction, an increase in cognitive effects of the brain, and overall improved balance and motor coordination. However, there was little research about the positive effects of dance that includes the older geriatric population (85 years and older). There were many similarities in the positive effects of dance between healthy individuals over 55 years old and older adults with pre-existing conditions. *Conclusions:* Dance offers positive physical, cognitive, and social and emotional effects on healthy aging populations, as well as older adults and elderly living with health conditions, that help improve overall quality of life. Further research is necessary to determine if these positive effects may also be generalized to the older geriatric population.

Positive Effects of Dance on the Older Adult Population: A Scoping Review

As a person passes through their 50s, and into their 60s and 70s, there is an increase in the risk of health conditions resulting in physical and cognitive decline, as well as an increased risk of falls (*Shall we dance report - CPA*, 2011). There is a decline in both muscle mass and muscle strength as early as age 30 (Besdine, 2021). Not only does increased age correlate with possible physical and cognitive deficits, but there are more and more individuals living longer. The population of people 60 years and older has greatly increased in the past 10 years and is expected to double by 2050; the world's population of people 80 years and older is expected to triple by 2050 (World Health Organization, 2020). However, this also means that the world must have enough resources to take care of this rapidly increasing older adult population. To lessen the demands of these resources, there are a variety of ways older adults are able to keep their bodies active while reducing the risk for potential health conditions. A few examples of physical exercise for the elderly population include walking, aquatic exercise, polo, and dancing.

Dancing is an activity that can be performed by any individual, regardless of most health conditions and age, including those who utilize wheelchairs as their primary means of mobility. There are a variety of styles of dance for people to choose from, including jazz, tap, lyrical, ballet, hip-hop, pointe, modern, theater, ballroom, the waltz, tango, and many more styles. While there is limited research on the effects and effectiveness of each style of dance, ballroom dancing and line dancing appear to be popular and provide physical, cognitive, and specifically social and emotional effectiveness amongst the older adult and geriatric populations (Kshtriya et al., 2015). Different cultures have a different perspective on styles of dance, but regardless of the differences in cultures, dance is still a physical activity that offers positive effects for the general older adult population.

Overall, physical activity is crucial amongst the older adult population as they are more likely to be inactive, resulting in physical, cognitive, and emotional decline (de Guzman et al., 2015). Results from this study indicate that more physical activity leads to less mobility limitation and higher cognitive performance. Results also emphasize how an increase in the fear of falling decreases the amount of physical activity a person may participate in, which in turn increases their mobility limitations and decreases their cognitive performance (de Guzman et al., 2015). Physical activity increases cognitive performance, such as executive functioning, and physical activity that requires multiple components (physical and cognitive tasks) leads to a higher quality of life amongst older adults (Kaushal et al., 2018).

While people of all ages can participate in dance, it is significantly important amongst the older adult population because this activity can help them in a variety of different ways (*Shall we dance report - CPA*, 2011). One way dance can benefit the older adult population is by helping to connect the body and mind, as dance requires the following components: use of the physical body to move, the mind to remember the motions, and motor planning to plan out each movement (Thornberg et al., 2012). Dance can also reawaken feelings and rekindle memories amongst the older adult population. According to Thornberg et al. (2012), “The memories were expressed by improvisational movements, which resulted in an awareness of connection between body and mind” (p. 74). Dancing not only assists with cognition but may also decrease fall risks amongst this population as well, which are higher amongst the older adult population. A study done on 38 participants who participated in an 8-week dance intervention found that the fear of falling decreased significantly after participating in the 8-week dance program, as well as a decrease in the amount of time it took to complete the Timed Up and Go (TUG) test (Britten et

al., 2017). These studies exhibit the beginnings of positive effects of dance on the steadily increasing older adult population.

Dance has positive physical, cognitive, social, and emotional effects on the older adult population, as well as improving their quality of life. One study found that dancing may positively affect metabolic improvements, as well as increase quality of life and lower the risk of falls amongst the older adult population, thus emphasizing the positive physical and social and emotional effects (Rodrigues-Krause et al., 2019). Another study indicates that dancing may be a good intervention to work on improvement of motor-cognitive tasks, or tasks that require the use of both mind and physical body movement, which emphasizes the positive physical and cognitive effects dance may have on the older adult population (Hamacher, 2015).

As people continue to live longer, more research is necessary to meet the needs of these populations. One study showed that dance is an effective method to help the older population remain healthy, or decrease symptoms of populations with specific conditions, such as Parkinson's disease (Prewitt et al., 2017). According to this study, dance utilized as a therapeutic tool may improve executive functioning in relation to physical movement amongst the older adult population with Parkinson's disease; providing an opportunity for medical professionals to utilize these findings and promote dance as an option for this population can improve these individuals' quality of life (Prewitt et al., 2017). However, there is still little existing research on the effects of dance on the older adult population.

Purpose and Research Questions

The purpose of this scoping review is to examine and evaluate the nature and extent of research on the benefits of dance for older adults. This scoping review contains a thorough

investigation of the positive effects of dance on the older adult to older geriatric populations that are increasing in population. The research questions are as follows:

1. What are the benefits of dance for older adults?
2. Are there differences in the effectiveness of dance programs or classes on older adults between the ages of 55 -84 years compared to adults 85 years and older?
3. Are there differences in the effectiveness of dance programs or classes on healthy older adults compared to older adults with pre-existing conditions?

Methods

A scoping review of the literature was conducted following the six stages of Westphaln et al (2021). A scoping review is chosen when there is a limited amount of research available on a topic and the researcher wants to identify all relevant literature on a topic to determine gaps in the research.

Design

A six -step approach was utilized in this scoping review. The steps were as follows: (1) identification of research question; (2) research of relevant studies through a variety of databases (3) selection of research articles; (4) data extraction with the use of an annotated bibliography; (5) data collection; (6) findings of the similarities and differences between each of the articles (Westphaln et al., 2021).

Search Strategy

Scoping reviews provide an overview of a specific research topic, in this case, the benefits of dance for older adults. Databases utilized for this scoping review include CINAHL, Pubmed, PsycINFO, SPORTDiscus, and Google Scholar. The original search was completed August 23, 2021. Search terms were as follows: dance, older adults, geriatrics, seniors, elderly,

physical activity, exercise, physical fitness, fitness, physical exercise, and “positive effects of dance on the geriatric population.” Filters included “Full Text” and “English” for all databases except CINAHL and Google Scholar. No filters were utilized under Google Scholar. Filters for CINAHL included “Full Text,” “English,” and “Academic Journals.”

Data Extraction

The initial online search was implemented on August 30th, 2021, in the five previously mentioned databases, and yielded 232,001,148 results. Literature was initially appraised broadly, however, further refinement of the purpose and research questions helped to narrow the search significantly. A screening of the abstracts narrowed down the search, and more studies were excluded if they were found to not meet the eligibility criteria. Ultimately, 21 articles met the inclusion criteria and were charted for this scoping review.

Inclusion Criteria

Inclusion criteria for this scoping review included articles that include the older adult to geriatric population (any adult over 55 years old). One article that consisted of ages 55 and older, but still contained an age range lower than 55, was included in the scoping review. Articles were written in the English language and must have had the full text attached. The articles could have consisted of studies done in any country and utilized a wide variety of settings. Articles must have been published from December 2005 to December 2021, and they did not have to be peer-reviewed. The participants' health status included both participants who were healthy and participants with health conditions that include metabolic syndrome, Parkinson’s disease, dementia, Alzheimer’s disease and type II diabetes. None of these conditions were specifically searched for in any of the databases, but were rather happenstance.

Exclusion Criteria

Exclusion criteria included any article on dance that focused on ages 54 and under, with exception of one systematic literature review. Other exclusion criteria included other styles of exercise that were not considered dance, including aerial yoga and gymnastics.

Participants

While there were no active participants in the study, the articles utilized for the scoping review contained participants ages 55 years and older, female and male, in multiple countries including Brazil, China, Greece, the United Kingdom, Canada, New Zealand, India, the Netherlands, Hong Kong, Korea, Poland, and the United States of America.

Results

A search of the literature conducted between August - December 2021 on five databases yielded 232,001,148 potentially relevant studies. After a thorough screening, 21 studies that examined the effects of dance on older adults were included in this scoping review. The data extraction process is illustrated in Figure 1. Information from each study, including research design, sample size and population, age range of participants, country of study, aim of study, and main findings from study were collected and included in Table 1.

Figure 1

PRISMA Flow Chart

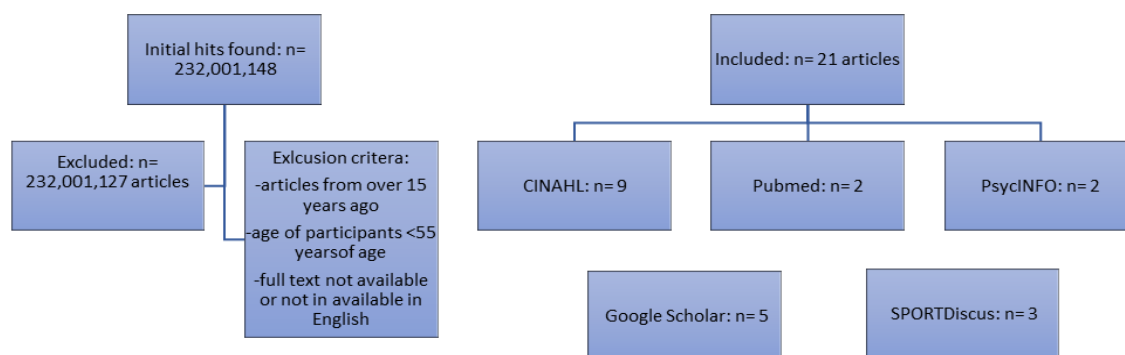


Table 1.*Table of Included Studies*

Citation	Research Design	Sample Size and Population	Age Range of Participants	Country(s)	Aim of Study	Main Findings
Capello. (2018). Dance/Movement Therapy and the Older Adult Client: Healing Pathways to Resilience and Community. <i>American Journal of Dance Therapy</i> , 40(1), 164–178. https://doi.org/10.1007/s10465-018-9270-z	Transcription of a panel discussion	7 experts in their specific fields	N/A	United States, Hong Kong, the Netherlands, United Kingdom, India, Canada and New Zealand	“The International Panel featured at the 2017 American Dance Therapy Association Conference in San Antonio, Texas focused on the work of dance/movement therapists from around the world that are exploring the rich potential of dance and movement as a significant physiological and psychological process for healthy aging.”	“Sharing their work with sensitivity and joy, the Panelists described how unique approaches in dance/movement therapy are in the forefront of healing and care for this growing population. Clearly, the importance of the older adult ‘being seen’ and ‘valued’ as individuals was a theme that pervaded each presentation. The vitality and exuberance nurtured by the shared dance/movement experience in long term care settings, residential homes, community programs, and hospital wards revealed the beautiful resilience of the human spirit.”

<p>Crumbie, V., Olmos, F., Watts, C., Avery, J., & Nelson, R. (2015). The impact of dance interventions on mood and depression in older adults. <i>Therapeutic Recreation Journal, 49</i>(2), 187–190.</p>	<p>Literature Review</p>	<p>8 articles</p>	<p>Older adults (specific age not mentioned)</p>	<p>United States, Australia, China, and Czech Republic</p>	<p>The aim of the study is to create what would be considered the most effective dance program for older adults according to the literature review.</p>	<p>“Therefore, the collective findings noted above provide support for the use of dance as a viable treatment option for improving mood and decreasing depression in older adults.”</p> <p>“When deciding which type of dance program to adopt, it is suggested therapists select a style of dance that is of interest to their clients... Dance interventions should last approximately one hour and be of moderate intensity level for physical activity. Sessions should include a structured warm-up, followed by dance instruction, a break, and finally a cool down period (Lewis et al., 2014; Murrock & Graor, 2014; Pinniger et al., 2012; Vankova et al., 2014). According to the literature, dance programs should be</p>
--	--------------------------	-------------------	--	--	---	--

						offered once or twice a week for 10 to 15 weeks... The use of preferred music or familiar dance steps during intervention sessions may aid in improving the mood of clients (Lewis et al., 2014).”
Douka, S., Zilidou, V. I., Lilou, O., & Manou, V. (2019). Traditional dance improves the physical fitness and well-being of the elderly. <i>Frontiers in Aging Neuroscience</i> , 11. https://doi.org/10.3389/fnagi.2019.00075	Pretest-Posttest Control Group	150 elderly members	Mean age = 67 years old	Greece	“The purpose of this study was to investigate the impact of a Greek traditional dances program on elderly people over the age of 60. Particularly, to investigate whether Greek traditional dance as a form of aerobic exercise, could improve the functional capacity and the well-being of the elderly people.”	“Greek traditional dance is a physical activity that contributes positively to many factors on the physical health of elderly people by enhancing the well-being outcomes for elderly people.”
Fisher, M., Kuhlmann, N., Moulin, H., Sack, J., Lazuk, T., & Gold, I. (2020). Effects	Pilot Study	10 older adults with Parkinson’s Disease	Mean age = 66 years old	Canada	“The purpose of the present project was to further explore what therapeutic benefits DMT	“Despite the relatively short intervention, functional gains in balance and cognition, in

<p>of improvisational dance movement therapy on balance and cognition in Parkinson's disease. <i>Physical & Occupational Therapy in Geriatrics</i>, 38(4), 385–399.</p>					<p>can offer those with PD. In particular, we ask whether improvisational DMT leads to improvements in the motor or the social cognitive domains in a cohort of individuals diagnosed with PD.”</p>	<p>particular in executive function, were found. No significant changes in social cognition or gesture production were found.”</p>
<p>Gandy, L., Sy, K., Hamilton, K., Medina, A., Prado, P., Santos, A., Masoud, S., White, C., & Subramanian, S. (2021). Tango together: Developing and implementing dance workshops in a memory care center. <i>Archives of Physical Medicine & Rehabilitation</i>, 102(10), e32.</p>	<p>Pilot study; pretest posttest design</p>	<p>6 older geriatric patients (5 female patient with dementia and 1 male caregiver)</p>	<p>Average age = 85 years old</p>	<p>United States</p>	<p>“The objectives of this program were to examine the feasibility of a dance program for persons with dementia and their family caregivers in a memory center and to examine its impact on physical function and socialization.”</p>	<p>“Results from this pilot study indicate the feasibility of a community based dance intervention in improving gait parameters for individuals with dementia.”</p>

<p>Garcia Gouvêa, J. A., Dias Antunes, M., Bortolozzi, F., Marques, A. G., & Marques Gomes Bertolini, S. M. (2017). Impact of Senior dance on emotional and motor parameters and quality of life of the elderly. <i>Rev Rene</i>, 18(1), 51–58.</p>	<p>Pre-experimental study with pre and post-test</p>	<p>20 older adult, geriatric, and older geriatric participants</p>	<p>60-89 years old</p>	<p>Brazil</p>	<p>“Thus, the aim of this study was to investigate the effects of the Dance Senior on cognitive and motor parameters and on the quality of life of the elderly.”</p>	<p>“Based on the parameters evaluated, the study led to the conclusion that the Senior Dance positively influenced the balance and quality of life of the elderly. However, it was not efficient in all aspects of mental health, but only for anxiety classified as temporary emotional state.”</p>
<p>Guzmán-García, A., Hughes, J., James, I., & Rochester, L. (2013). Dancing as a psychosocial intervention in care homes: A systematic review of the literature. <i>International Journal of Geriatric Psychiatry</i>, 28(9), 914–924.</p>	<p>Systematic Review</p>	<p>10 studies; 7 qualitative and 3 quantitative</p>	<p>Includes studies from 1967-2012</p>	<p>Finland, Germany, Australia, England, and Sweden</p>	<p>“The aim of this systematic review is to consider the evidence and its quality regarding the efficacy of dance studies for people with dementia who are living in long-term care homes.”</p>	<p>“In summary, the evidence-base revealed by this review is small; however, results have linked dancing with positive mood, such as reducing stress and diminishing problematic behaviour for the participants such as agitation. The potential benefits of dance work are inconclusive and questions on its physical and cognitive</p>

						components remain unclear, which we would recommend researching in depth. We call for increased awareness of dance work as a potentially social engaging activity for residents living in long-term care.”
Ho, R. T. H., Cheung, J. K. K., Chan, W. C., Cheung, I. K. M., & Lam, L. C. W. (2015). A 3-arm randomized controlled trial on the effects of dance movement intervention and exercises on elderly with early dementia. <i>BMC Geriatrics</i> , 15(1), 127. https://doi-org.proxy-etown.klnpa.org/10.1186/s12877-015-0123-z	3-Arm Randomized Controlled Trial	131 elderly patients with early dementia	65-90 years old	China	“The primary objective of the proposed study is to explore the effects of a dance movement based intervention on dementia-related indicators such as neuropsychiatric symptoms (behavior, psychosis, ,apathy), psychosocial wellbeing (depression, loneliness and current affective state), physiological stress (indicated by cortisol), cognitive functioning	“With a systematic experimental design that uses longitudinal follow up and a larger sample size, paired with an evidence-based intervention, this RCT aims to confirm previous findings and provide new insights into how dance movement can provide unique benefits to elderly dementia patients. Additionally, the use of salivary cortisol will elucidate the mind-body association and provide empirical evidence of the effects of dance movement interventions.”

					(executive function, episodic memory, visuospatial construction) and daily functioning. The secondary objectives of this study are to explore the proposed intervention's effect on dementia prognoses and examine how cortisol levels relate to neuropsychiatric, psychosocial, cognitive and functional measures in early dementia.”	
Hwang, P. W.-N., & Braun, K. L. (2015). The effectiveness of dance interventions to improve older adults' health: A systematic literature review. <i>Alternative Therapies in Health &</i>	Systematic Review	18 articles; 10 RCT's, 4 Quasi Experimental; 4 1-group pretest posttest design	Includes studies from 2004-2013	United States, Switzerland, France, Portugal, Brazil, Czech Republic, and Korea	“Thus, the purpose of the current review was to examine the effectiveness of dance programs in improving the physical health of all older adults, both those with health	“The results for the current review have shown that dance is a promising method for improving older adults' physical health. In addition, studies show that dance interventions may address older adult barriers to being physically

<p><i>Medicine</i>, 21(5), 64–70.</p>					<p>conditions and those considered healthy.”</p>	<p>active such as cultural preferences, pre-existing medical conditions, and physical limitations.”</p>
<p>Kattenstroth, J., Kalisch, T., Holt, S., Tegenthoff, M., & Dinse, H. R. (2013). Six months of dance intervention enhances postural, sensorimotor, and cognitive performance in elderly without affecting cardio-respiratory functions. <i>Frontiers in Aging Neuroscience</i>, http://dx.doi.org/10.3389/fnagi.2013.00005</p>	<p>Pretest Posttest Control Group</p>	<p>35 healthy older adult to older geriatric participants</p>	<p>60-94 years old</p>	<p>Germany</p>	<p>“We therefore initiated a study where we investigated the effect of a 6-month long dance class (1 h/week) in a group of elderly individuals (IG) by using a pre-post design in comparison to a non-dancer CG.”</p>	<p>“This study indicated that dancing might be an ideal option for intervention in age-related degradations. However, the possibility remained that the beneficial effects observed in elderly dancers is due to the fact that a subpopulation of individuals characterized by unusually high fitness levels had chosen an active lifestyle during early adulthood that possibly included dancing, and these individuals were therefore able to maintain such a lifestyle over many years.”</p>

<p>Kim, S., Kim, M., Ahn, Y., Lim, H., Kang, S., Cho, J., Park, S., & Song, S. (2011). Effect of dance exercise on cognitive function in elderly patients with metabolic syndrome: A pilot study. <i>Journal of Sports Science & Medicine, 10</i>(4), 671–678.</p>	<p>Pilot Study</p>	<p>38 participant with metabolic syndrome</p>	<p>60 years and older</p>	<p>Korea</p>	<p>“We therefore performed the present prospective pilot study to examine the effects of dance exercise on the cognitive function of elderly patients with MS.”</p>	<p>“We found that dance exercise performed for 6 months improved cognitive function in this population [metabolic syndrome].”</p>
<p>Lazarou, I., Parastatidis, T., Tsolaki, A., Gkioka, M., Karakostas, A., Douka, S., & Tsolaki, M. (2017). International Ballroom Dancing Against Neurodegeneration: A Randomized Controlled Trial in Greek Community-Dwelling Elders With Mild Cognitive</p>	<p>Single-blind, randomized controlled trial</p>	<p>129 older adult and elderly patients with mild cognitive impairments</p>	<p>60-80 years old</p>	<p>United States</p>	<p>“The purpose of this single-blind randomized controlled trial was to evaluate the impact of age-appropriate dance class instruction on cognition and mood (specifically depression and anxiety) in patients with MCI, community-dwelling, Greek Speaking elderly</p>	<p>“Our study indicated that dancing might be an ideal option for intervention in age-related degradations, especially with people with limited social life and several cognitive limitations.”</p>

<p>impairment. <i>American Journal of Alzheimer's Disease & Other Dementias</i>, 32(8), 489–499. https://doi-org.proxy-etown.klnpa.org/10.1177/1533317517725813</p>					<p>ranging in age from 60 to 80.”</p>	
<p>Listewnik, B., & Ossowski, Z. M. (2018). The influence of dance on selected risk factors of falls in Parkinson's disease patients - A pilot study. <i>Baltic Journal of Health & Physical Activity</i>, 10(1), 38–45.</p>	<p>Pilot Study</p>	<p>10 participants with Parkinson's disease</p>	<p>Mean age: 69.9 years old</p>	<p>Poland</p>	<p>“Therefore, the main goal of the present study was to evaluate the influence of therapeutic dancing classes on gait, functional mobility, body balance and endurance of PD patients.”</p>	<p>“The study indicates that 12 weeks of long therapeutic dancing classes proved effective as a therapeutic technique, improving body balance, gait, functional mobility and increasing endurance in patients participating in the intervention program.”</p>
<p>Miotto Nadolny, A., Trilo, M., da Rosa Fernandes, J., Passos Pinheiro, C. S., Ziemer Kusma, S., & Marquine Raymundo, T. (2020). Senior dance as a resource of the</p>	<p>Exploratory, descriptive, interventional, longitudinal prospective study with a qualitative and</p>	<p>9 older adults and geriatric participants</p>	<p>60-79 years old</p>	<p>Brazil</p>	<p>“Therefore, this study aims to analyze and identify possible contributions of Senior Dance® to the quality of life of the older adults, applied as a resource for</p>	<p>“As a routine for practitioners, dancing can bring several benefits, such as improved balance, motor coordination, improved socialization, and self-esteem. Also,</p>

<p>occupational therapist with older adults: contributions in the quality of life. <i>Brazilian Journal of Occupational Therapy / Cadernos Brasileiros de Terapia Ocupacional</i>, 28(2), 554–574. https://doi.org/10.4322/2526-8910.ctoAO1792</p>	<p>quantitative approach</p>				<p>the occupational therapist.”</p>	<p>dance is a physical activity that brings satisfaction to those who perform it, which has been proven with the elderly practitioners of the Senior Dance® workshop.”</p>
<p>Rehfeld, Lüders, A., Hökelmann, A., Lessmann, V., Kaufmann, J., Brigadski, T., Müller, P., & Müller, N. G. (2018). Dance training is superior to repetitive physical exercise in inducing brain plasticity in the elderly. <i>PloS One</i>, 13(7), e0196636–e0196636. https://doi.org/10.1371/journal.pone.0196636</p>	<p>Pretest Posttest Control Group Design</p>	<p>52 healthy older adult and elderly participants</p>	<p>63-80 years old</p>	<p>United States</p>	<p>“This study examined the effects of a specially designed dance training program requiring constant learning of new choreographies compared to a conventional sportive fitness training with mainly repetitive exercises on brain structure and function in healthy seniors.”</p>	<p>“We were able to demonstrate in a randomized intervention trial that dancing has a strong potential to induce more positive effects on brain volumes in elderly people.”</p>

<p>Rodrigues-Krause, J., Krause, M., & Reischak-Oliveira, A. (2019). Dancing for healthy aging: Functional and metabolic perspectives. <i>Alternative Therapies in Health & Medicine</i>, 25(1), 44–63.</p>	<p>Systematic Review?</p>	<p>55 articles; 31 RCTs, 8 pre- and post intervention studies with 1 group only, 8 observational studies—all cross-sectional trials⁴, and 3 quasi-experimental studies—2 nRCTs and 1 trial comparing participants who completed the dance intervention with the ones who did not finish the study</p>	<p>Includes participants in all studies >55 years old</p>	<p>Brazil</p>	<p>“Specifically, the research team aimed to identify and describe the characteristics of a large range of studies using dance as an intervention, summarizing them and putting them in perspective for further analysis.”</p>	<p>“The main findings of this review underline 3 major points: (1) all dance styles seemed to be successful in inducing positive effects in functional outcomes in older adults; (2) balance was the outcome most assessed in the studies using dance as an intervention or exposition factor; and (3) although metabolic outcomes were assessed to a lesser extent, they may also improve in response to dancing.”</p>
<p>Sanders, M. E. (2019). Dance fitness: Older adults give it a</p>	<p>Literature Review</p>	<p>Number of articles</p>	<p>Not specified</p>	<p>United States</p>	<p>“There’s significant research beneath</p>	<p>“It not only offers significant quality-of-life</p>

<p>whirl. <i>Journal on Active Aging</i>, 18(2), 66–72.</p>		<p>was not specified</p>			<p>all this enjoyment, however, so let's sashay into a few studies to better understand the health benefits associated with dance-based fitness workouts and why it is a fast-growing trend in active-aging programs.”</p>	<p>improvements for older adults with depression, chronic conditions and serious health challenges, it also simply provides lots of enjoyment, camaraderie and a playground-like atmosphere that participants say they especially enjoy.”</p> <p>“Dancing by different populations with chronic conditions resulted in a reduction in depression and social isolation.”</p>
<p>Simona, C. D., Silvui, D. A., Floris, S. A., Daniel, D. A., & Zorina, S. A. (2020). Dance Movement Therapy Influence the Quality of Life and Has Behavioral Improvements in Dementia Patients. <i>Ovidius University Annals, Series Physical</i></p>	<p>Repeated Measures Design</p>	<p>7 older adult and geriatric participants</p>	<p>>60 years old</p>	<p>Romania</p>	<p>“Our aim was to demonstrate the beneficial outcomes of the dance movement therapy in dementia patients for cognitive and emotional states.”</p>	<p>“In addition, we conclude that music along with dancing, helps to improve depression and prevent psychiatric symptoms among dementia patients.”</p>

<p><i>Education & Sport/Science, Movement & Health, 20(2), 91–96.</i></p>						
<p>Vadineia da Silva, M., Alves Lima, D., da Conceição Silva, T. M., de Carvalho Melo, T. M. T., Pereira da Cunha, V., & Pessoa da Silva, M. N. (2016). Dance: A therapeutic resource in the third age. <i>Journal of Nursing UFPE / Revista de Enfermagem UFPE</i>, 232–238. https://doi.org/10.5205/reuol.7901-80479-1-SP.1001sup201606</p>	<p>Descriptive, field and qualitative analysis</p>	<p>12 older adults and geriatric participants</p>	<p>60-73 years old</p>	<p>Brazil</p>	<p>“Assessing dance as a therapeutic resource for a group of seniors and identify the psychoaffective interactions.”</p>	<p>“Dance was considered an important activity for all respondents of the Community Center by providing them with muscle power to perform day-to-day, helped build a good image of themselves, contributing to the development of self and personal interactions and healthy interpersonal.”</p>

<p>Wołoszyn, N., Wiśniowska-Szurlej, A., Grzegorzczak, J., & Kwolek, A. (2021). The impact of physical exercises with elements of dance movement therapy on the upper limb grip strength and functional performance of elderly wheelchair users living in nursing homes – a randomized control trial. <i>BMC Geriatrics</i>, 21(1) 1–14. https://doi.org/10.1186/s12877-021-02368-7</p>	<p>Randomized Control Trial</p>	<p>165 older adult and geriatric who are wheelchair bound</p>	<p>68-85 years old</p>	<p>Poland</p>	<p>“The main aim of this research was to assess the influence of physical exercises with dance movement therapy (DMT) elements on strength and other fitness components of the upper limbs and the overall functional performance of NH residents in wheelchairs compared to standard exercise programmes and usual care.”</p>	<p>“The results of the study demonstrated that persons who participated in 2 exercise sessions per week for a 12-week period had increased parameters that helped assess upper extremity fitness and overall functional performance.”</p>
<p>Wu, Wei, T.-S., Chen, S.-K., Chang, J.-J., Guo, L.-Y., & Lin, H.-T. (2010). The effect of chinese yuanji-dance on dynamic balance and the associated</p>	<p>Randomized Control Trial</p>	<p>30 female older adult and geriatric participants</p>	<p>Mean age = 68.67 years old</p>	<p>China</p>	<p>“The purpose of this study was to investigate the training effects of a Chinese traditional exercise, Yuanji-Dance, on walking balance and the associated</p>	<p>“Our study verified that Yuanji-Dance practice can benefit the general cognitive and perceptual-motor functions of elderly people and not influence the dynamic walking balance.”</p>

attentional demands in elderly adults. <i>Journal of Sports Science & Medicine</i> , 9(1), 119–126.					attention demand in the healthy elderly.”	
--	--	--	--	--	---	--

Emerging Themes

Three themes about the positive effects of dance emerged from the literature: physical, cognitive, and social/emotional effects. All three themes, physical effects, cognitive effects, social/emotional effects addressed all three research questions: 1. What are the benefits of dance for older adults? 2. Are there differences in the effectiveness of dance programs or classes on older adults between the ages of 55 -84 years compared to adults 85 years and older? 3. Are there differences in the effectiveness of dance programs or classes on healthy older adults compared to older adults with pre-existing conditions?

Physical Effects

One of the most prominent positive effects dance had on the older adult population was positive physical effects. Positive physical effects included improvement in handgrip strength, balance, posture, body mass index (BMI), relaxation of joints and muscles, jumping ability, endurance, muscle strength, and a variety of other physical effects. Positive physical effects were shown throughout the healthy older adult population as well as throughout older adult populations with conditions such as dementia or Parkinson’s disease. Positive physical effects were found for both healthy older adults and older adults living with pre-existing health conditions.

A group of researchers studied emotional and physical states before and after a 3-month long dance program called “Senior Dance,” and found that there was a significant positive change in the participants' balance before and after taking the dance program, measured by the Berg Balance Scale (Garcia Gouvêa et al, 2017) . Garcia Gouvêa et al., stated “As the Senior Dance is a physical activity of low to moderate intensity, the improved body balance of the elderly attending the Senior Dance can be explained most probably by decreased joint stiffness and improvement of nervous impulse conduction velocity than by increased muscle mass and strength” (2017, p. 54). While this article only stated a few physical benefits of dance, there were other studies that found a variety of physical benefits for the older adult population.

Hwang and Braun (2015) conducted a systematic literature review on the effects of dance in the elderly population from 18 different international studies. The researchers divided physical health into six categories: flexibility, muscular strength and endurance, balance, cardiovascular endurance, cognitive function and body composition. Hwang and Braun (2015) stated, “With the exception of 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,” which showcased that dance had a positive effect on all of these categories, except body composition, where no significant change was shown:

There were also studies, such as Douka et al. (2019), that studied overall well-being, as well as physical effects dance has on the older adult population, and found that there was a statistically significant improvement in participants who completed the dance program in almost every category measured except in their jumping vertical ability. However, results still did show an overall increase in their jumping vertical ability, but not enough where it was proven to be

statistically significant. Therefore, this study further proves that dance can significantly improve physical health amongst the older adult population, and should be further utilized amongst the older adult population. Another study focused on how a dance program may affect a healthy older adult's walking balance and the attention demanded for this task, as well as overall cognitive performance (Wu et al., 2010). Amongst 15 participants, ages running from 60-70 years old, this study discovered that the dance program had positive effects on overall cognitive and perceptual motor functions (2010).

There have also been studies completed on how dance affects older adults with pre-existing conditions like dementia and Parkinson's disease. Sanders (2019) studied the quality of life and physical health effects of dance on other conditions that includes Parkinson's disease, which is most common amongst the older adult, and type II diabetes. "During another study that investigated the effects of tai chi, tango or waltz/foxtrot dance therapies among Parkinson's patients, participants improved balance, gait functions and quality of life in all programs" (Sanders, 2019, p. 69). Hence, this provided evidence of how dance can improve physical health and quality of life amongst older adults with Parkinson's disease.

Another study, a pretest/posttest pilot study on older adults living with Parkinson's disease, also explored how dance can improve these populations' overall physical health (Listewnik, 2018). Ten participants, age range between 63 and 76 years old, took part in a 12-week dance intervention where their gait, functional mobility, body balance, and endurance were examined both before and after the 12-week period. The results from this Listewnik (2018) concluded that therapeutic dance classes, lasting 12 weeks long, can improve multiple physical functions of the body: body balance, gait, functional mobility, and endurance.

However, Parkinson's is not the only pre-existing in which dance provides positive physical effects. While dementia is a condition that affects the mind more so than the body, aging individuals with dementia still suffer through physical decline. A pretest/posttest study was conducted on older adults with dementia who participated in a tango dance program in which these individuals were tested for their gait patterns before and after the dance program. Results from this study showed that the gait pattern for these patients was steadier and more organized after participating in the dance program (Gandey et al., 2021).

Other physical effects of dance, such as functional and metabolic outcomes, for older adults aged 55 years and older were studied by Rodrigues-Krause et al. (2019). Rodrigues-Krause et al. states metabolic outcomes as pertaining to cholesterol levels, glucose levels, blood pressure, specific protein and lipid levels, body composition (including body mass index (BMI), body fat, lean mass, and skin folds), and "other specific cardiovascular risk factors or inflammatory or oxidative stress markers" (2019, p. 46). Both functional and metabolic health effects encompass a wide variety of physical health benefits, including gait ability, balance, falls and quality of life, muscle strength/power and flexibility, cardiorespiratory fitness, body composition, and metabolic outcomes and cardiovascular risk. Rodrigues-Krause et al. (2019) concluded that, "Any dance style can induce positive functional adaptations in older adults, especially related to balance. Metabolic improvements may also be a result of dancing" (p. 44). A few metabolic outcomes found were improvements in cholesterol levels, blood pressure and a decrease in BMI and body fat.

While Woloszyn et al. 's (2021) research did not study a specific condition, the researchers studied a specific population: wheelchair users. While being a wheelchair user is not a pre-existing condition, older adults who are wheelchair users may still have pre-existing

conditions. According to Wołoszyn et al, those who utilized a wheelchair as their primary means of mobility had a statistically significant difference upon their hand grip strength (HGS), outcomes for box and block test (BBT), arm curl test (ACT), back scratch test (BS), chair sit-and-reach (CSR), peak expiratory flow (PEF), Barthel Index (BI), Berg Balance Scale (BBS), and range of motion of the shoulder when they utilized dance as part of their therapy, rather than just performing basic exercises (2021). Outcomes were measured after both the 12-week and 24-week periods amongst 3 groups: one group received basic exercises, the second group received exercises that incorporated dance movement therapy, and the last group was the control group that did not receive any exercise. The results showed that the group who utilized dance movement therapy had better results in almost every area (Wołoszyn et al., 2021).

It is important to recognize that the benefits of dance are both physical and cognitive. As Vadineia et al. states, “Dance helps the elderly to develop coordination, agility, improves body image, intelligence, enabling an improvement in self-esteem, and the minimization of various psychological problems” (2016, p. 234). Thus, providing evidence that the positive effects of dance delve further than just physical effects and into positive cognitive, and social and emotional effects as well.

Cognitive Effects

Dancing requires a variety of cognitive skills, such as memory, sequencing, problem solving, and attention. Dancing leads to a decrease of intellectual and memory loss (Lazarou et al. 2017). Physical activity helps increase blood flow to the heart and brain, which in turn assists with cognitive functions. Since dance can be done in many styles and many capacities, this is an ideal activity for the older adult population. Studies were conducted on both the healthy older

adult population and older adults with pre-existing conditions, but let's begin with literature found on healthy older adults.

One study explored the physical and cognitive improvements following dance programs. Sanders (2019) also offers personal insight when mentioning her aunt: "My 90-year-old aunt Jean has a hard time remembering what she ate for breakfast, but she can shout out the steps and tap her feet as joyfully as she did in recital many years ago" (p. 90). This is just one example of how participation in dance lessons or in a dance program can help improve the memory of older adults.

A study was completed on 38 participants between the ages of 63 and 80 years old in which neuroplasticity of the brain was studied before and after participants completed a dance program (Rehfeld et al., 2018). The gray matter portion of the brain that controls episodic memory appears to have slightly increased in the group of participants that participated in the dance program. The results from this study concluded that those who participated in regular exercise did not experience this increase in gray matter as dance requires memory to retain what the dance instructor has said, as well as to remember the sequence of the dance steps. An increase in white matter is also seen in dancers, specifically in the frontal and parietal parts of the brain, which controls multiple factors of cognition such as executive functioning, voluntary movement, and sensation (Rehfeld et al., 2018). The results of this study indicated that dance improves cognitive skills of older adults while also promoting neuroplasticity of the brain.

Kattenstroth et al. also found positive cognitive effects amongst older adults who participated in a long-term dance program (2013). For this study, tests that examined cognition, intelligence, attention, reaction times, motor, tactile, postural, and cardio-respiratory performance were assessed before and after a 6-month dance intervention (Kattenstroth et al.,

2013, para. 24). The results of these assessments indicated that there were significant improvements in almost every area of assessment for the participants who partook in the 6-month dance program intervention. Thus, further providing evidence of how cognition is positively affected in healthy older adults after participating in a dance program or classes.

Not only were positive cognitive effects found throughout the healthy older adult population but could also be seen in older adults with pre-existing conditions. In a study that looked at cognitive function in adults with metabolic syndrome can be improved through dancing: In this study, Kim et al. (2011) studied 38 participants with metabolic syndrome over the age of 60, who participated in an intense 6-month dance program, Results concluded that these participants received an improvement in overall cognitive functioning.

One study that focused on the cognitive and emotional effects of international ballroom dancing on older adults who have a mild cognitive impairment (MCI) found that the experimental group participating in the 10-month dance intervention showed significant improvements in cognition, as well as mood and behavior (Lazarou et al., 2017). The study consisted of 129 participants between the ages of 55-75 years old, who were diagnosed with a MCI and were separated into two groups: one group received a 10-month dance intervention, while the control group received no dance intervention.

Social and Emotional Effects

In addition to the positive physical and cognitive effects dance can have on the older adult, dance can also have positive social and emotional effects and improve mood both among the healthy population and those living with pre-existing conditions, such as dementia or Alzheimer's disease.

Capello (2018) wrote about a panlist of seven individuals' ideas and beliefs of utilizing dance movement therapy (DMT) amongst the older adult population. One panelist from the United States of America, Donna Newman-Bluestien, stated, "Through dance and movement there is the possibility for genuine, heartfelt exchanges that encourage intimacy and joyful expression, which, Newman-Bluestein feels, can lead to neurogenesis thus supporting both memory and learning" (Capello, 2018, p. 166). Another panelist from India, Devika Mehta, claimed, "Working with symbolism and movement metaphors, the participants became better able to identify a sense of self" (Capello, 2018, p. 173). The seven panelists all agreed that dance positively impacts the social and emotional well-being of the geriatric population, regardless of any pre-existing conditions.

In an exploratory longitudinal prospective study with a mixed methods approach, nine participants between the ages of 60 and 79 years old partook in a dance program and results of this study concluded that dancing can provide increased self-esteem and improved social skills, along with improved balance and motor coordination. (Miotto et al., 2020). This study also found that the older adults who participated in the Senior Dance workshop brought about feelings of satisfaction when dancing. Dancing is also a form of art that improves mood and even increases self-esteem and internal security. Crumbie et al. (2015) found that dance helps improve moods of depression and anxiety.

Another study explored that utilizing dance with older adults living with dementia helps improve their overall emotional well-being, quality of life, and behavioral state (Simona et al., 2020). Seven participants over the age of 60 partook in a 6-month study where they participated in dance movement therapy and after the program was completed, participants reported a decrease in symptoms of depression and feelings of loneliness and reported an overall

improvement in emotional well-being and quality of life. These participants also indicated they felt a decrease in fear and irritability, and began to participate more in household activities, as well as outdoor activities (Simona et al., 2020). Another study completed on individuals with dementia investigated how dancing affects geriatric individuals living with dementia in care homes (Guzman et al., 2013). The results from this study concluded that after individuals participated in dance classes or dance programs, behaviors that were considered to be problematic decreased, and there was an overall increase in enjoyment and life satisfaction.

Discussion

Overall, the studies included in this scoping review support the hypothesis that dance has many benefits for older adults. The effects of dance found from the 21 articles answer the research questions by highlighting the many benefits which include positive physical, cognitive, and social and emotional effects on both healthy older adults and adults living with pre-existing health conditions, regardless of the condition, as well as the positive effects of dance on all ages 55 and older.

The findings from this scoping review support that dancing has many physical, cognitive, and social and emotional effects on older adults. The results indicate dancing provides positive physical benefits, such as an improved balance, decrease in blood pressure and BMI, improved gait, increase in muscle tone and muscle mass, improved posture, endurance, handgrip strength, and flexibility, as well as an increase in relaxation of the muscles and joints. Positive cognitive benefits may include a decrease in memory loss, improvements in sequencing, problem solving, attention span, and executive functioning skills. The overall positive social and emotional effects provided by dance include an increase in quality of life, emotional wellbeing, overall life satisfaction, increase in self-esteem and mood, and decrease in depressive symptoms.

Of the 21 articles, most articles contained positive effects that overlapped with two or more of these themes. For example, one article may have written about both the positive physical and cognitive effects of dance on the older population, which is included in both the physical and cognitive themes. Few articles wrote about solely one benefit of dance for the older adult (55 years to 65 years of age), geriatric (65 years to 84 years of age), and older geriatric populations (85 years and older). Therefore, the articles and themes were not mutually exclusive. Amongst the literature, there were a wide variety of ages from the older adult to the older geriatric population who were represented within articles, as well as studies researched worldwide. However, there was little literature amongst the 21 articles discovered which covered the older geriatric population (85 years and older).

Despite all the information researched on older adults and the geriatric population ages 50-84 years old, there was little to be found on the physical effects of dance on the population of older adults aged 85 years or older. Four studies supported positive physical effects, such as an increased muscle strength and lessening of joint stiffness among adults over the age of 85 years. According to, *Shall we dance report - CPA* (2011), activities such as dance are even more critical in older adults: 6% of women over 75 years of age receive the physical exercise they need, and only 9% of men over 75 years of age receive the physical exercise they need (p. 4).

There were very few articles that addressed positive cognitive, social, or emotional benefits of dance for adults over the age of 85 years. Only one article referenced positive cognitive effects amongst older adults over 85 years of age (Kattenstroth et al., 2013). Only one article spoke to the effect dance has on the quality of life and mental health amongst older adults over 85 years of age (Garcia Gouvêa et al., 2017). Three articles mentioned having participants a certain age “and up,” but failed to provide a breakdown of the participants' ages; therefore, it is

unclear if the older geriatric population was included within these studies (Kim et al., 2007; Simona et al. 2020; Rodrigues-Krause et al., 2019).

Pertaining to the differences and similarities amongst older adults without pre-existing conditions compared to older adults with pre-existing conditions, there were little differences found between the two groups, regardless of the pre-existing condition (dementia, Parkinson's disease, mild cognitive impairment, etc.). One study explained how while dance can improve cognitive functions amongst older adults with mild cognitive impairments, such as Alzheimer's and dementia, there was a smaller improvement in cognition than in adults who do not have mild cognitive impairments (Lazarou et al., 2017). Lazarou et al. (2017) also stated that while there were not as significant improvements in the cognition amongst this population, the importance of the results exemplified that dancing slowed the decline of cognition amongst older adults with mild cognitive impairments. Thus, focusing more on maintaining cognitive function amongst this population, and less so on restoring cognitive function.

There was another evident difference between cognitive effects of older adults with Parkinson's disease, and healthy older adults. Fisher et al. (2020) states that results from his pilot study conclude that there were no significant changes in social cognition, which includes the ability to think of others, amongst this population. However, similar to healthy older adults, there were significant improvements in executive functioning amongst this population. There were no other studies utilized in this scoping review that mentioned social cognition, which may be a future research possibility as there is little literature available on this topic as well.

There were both similarities between the social and emotional effects of dance, as well as the physical effects of dance amongst older adults with and without preexisting conditions. In regard to the variety of pre-existing conditions, the physical effects of dance between older

adults with Parkinson's disease, dementia, mild cognitive impairments, and metabolic syndrome have similar benefits to both populations. Hence, implying that dance provides benefits to the older adult population regardless of living with a pre-existing or not.

While there has been little research completed on the effects of dance amongst the older adult population over 85 years of age, the literature that has been done has indicated that involvement in a dance program or intervention provides positive effects to the geriatric population and should be further investigated. As the aging population grows, and is expected to triple by 2050, effective interventions need to be in place to help the aging population stay active and healthy (World Health Organization, 2020). Dance is an activity that comes in all styles and levels, and is open to those of all ages. Therefore, more research should be conducted on the effectiveness of dance amongst the older geriatric population due to a growing older adult population.

Implications for Future Research

There are many opportunities to further investigate the effects of dance on the older adults over the age of 85 years old. Potential research could include longitudinal studies to look at the effects of dance over a longer period of time. Another option would be a pre-test post-test control study that utilizes, physical, cognitive, and social and emotional assessments that quantitatively explores the quality of life before and after a 6-month dance program amongst two experimental groups: one group aged 55-84 years old and another consisting of older adults over 85 years old. Pilot studies or case studies where the positive effects of dance can be studied amongst a specific population, such as a condition that is not studied often amongst older adults are suggested for future research.

Implications for Occupational Therapy

Occupational therapists are continuously looking for fun and creative ways to provide their clients with the most effective services across the lifespan. Occupational therapists should consider dance as an occupation that can improve clients' motor and cognitive abilities and promote health and wellness. Literature supports the fact that not only has dance proven to have positive effects on the physical, cognitive, and social and emotional health amongst the older adult populations, dance also improves the quality of life amongst this population. The improvement of quality of life is one of the main goals of an occupational therapist, and if a patient is able to physically and cognitively participate, their occupational therapist may consider utilizing dance as part of their intervention plan, as dancing improves overall quality of life amongst older adults (Miottot et al., 2020).

Occupational therapists need to evaluate and treat their patients according to their condition and/or injuries. Skilled observation is a critical factor that occupational therapists utilize when not only evaluating, but re-evaluating their patients, and occupational therapists are continuously re-evaluating their patients. By solely observing a patient partake in a dance class, an occupational therapist can learn about the patient's cognition, physical abilities, and social and emotional states while participating in a dance class. Dance involves more than solely physical abilities to complete the steps. The brain is continuously working, aligning with the body to get the moves with the music correctly, while also being a social and emotional activity, talking to others in the class or asking for help. Not only is this a fun activity for the patient, it is also an opportunity for the therapist to receive valuable information by observing multiple areas of function of the patient at once. This information offers a better perspective of the functional ability of the patient.

Limitations and Strengths

In discussing the results, limitations of the scoping review must also be considered. A small sample of articles were included in this scoping review, however, they sufficed in answering the research questions. One limitation to this scoping review was that not all articles or databases were available as some required payment and others required membership to access these articles or databases. Therefore, this limits the type and number of articles and databases researched for this scoping review. Another limitation is that this scoping review solely looked into the positive effects of dance on this population, while disregarding any negative effects dance may cause amongst this population. A third limitation is that studies consisted of a majority of women. Therefore, a majority of these studies may be difficult to generalize to men.

Despite this scoping review's limitations, the results indicate dancing provides positive physical benefits, such as an improved balance, decrease in blood pressure and BMI, improved gait, increase in muscle tone and muscle mass, improved posture, endurance, handgrip strength, and flexibility, as well as an increase in relaxation of the muscles and joints. Positive cognitive benefits may include a decrease in memory loss, improvements in sequencing, problem solving, attention span, and executive functioning skills. The overall positive social and emotional effects provided by dance include an increase in quality of life, emotional wellbeing, overall life satisfaction, increase in self-esteem and mood, and decrease in depressive symptoms.

Despite this scoping review's limitations, the results indicate positive physical, cognitive, and social and emotional effects: improved balance, gait, posture and endurance, decrease in blood pressure and BMI, relaxation of the muscles, decrease in memory loss, executive functioning improvements, increase in quality of life and overall life satisfaction, improvements in self-esteem and mood, and an overall decrease in depressive symptoms.

Conclusion

This scoping review explored three topics: 1) the positive physical, cognitive, social and emotional effects dance has on the older adult and geriatric populations, 2) if there are, or are not, any differences in dance classes or programs between the 55-84 year old population, and 85 year old and over community, and 3) if there are any differences in the effects of dance classes or programs between healthy individuals and individuals with pre-existing conditions. This scoping review highlighted the positive physical, cognitive, social and emotional effects of dance on the older adult population, including, but not limited to, an improvement in gait, balance, executive functioning skills, and a decrease in depressive symptoms. This study demonstrates that dance is an effective skill to utilize amongst the older adult community, regardless of age, and provides multiple benefits to both the healthy older adult population and the older adult population with pre-existing conditions.

Scoping Review in Action

As a result of this scoping review, I created a pamphlet as a hand-out for retirement communities. See Appendix A for pamphlet. The purpose of the pamphlet is to encourage retirement communities to provide dance programs or classes for their elderly clients, or to further develop dance programs or classes they may currently provide. While many individuals know of the positive effects of dance on the older adult population, they may not understand the extent of these effects. Therefore, this pamphlet not only aims to persuade the retirement communities, but also to educate them on the importance of dance amongst the older adult population.

References

- Besdine, R. W. (2021, November 17). *Changes in the body with aging - older people's health issues*. Merck Manuals Consumer Version. Retrieved from <https://www.merckmanuals.com/home/older-people%E2%80%99s-health-issues/the-aging-body/changes-in-the-body-with-aging>
- Britten, L., Addington, C., & Astill, S. (2017). Dancing in time: feasibility and acceptability of a contemporary dance programme to modify risk factors for falling in community dwelling older adults. *BMC Geriatrics*, *17*, 1–12. <https://doi.org/10.1186/s12877-017-0476-6>
- Capello. (2018). Dance/Movement Therapy and the Older Adult Client: Healing Pathways to Resilience and Community. *American Journal of Dance Therapy*, *40*(1), 164–178. <https://doi.org/10.1007/s10465-018-9270-z>
- Crumbie, V., Olmos, F., Watts, C., Avery, J., & Nelson, R. (2015). The impact of dance interventions on mood and depression in older adults. *Therapeutic Recreation Journal*, *49*(2), 187–190.
- de Guzman, A. B., Lacampuenga, P. E. U., & Lagunsad, A. P. V. (2015). Examining the Structural Relationship of Physical Activity, Cognition, Fear of Falling, and Mobility Limitation of Filipino in Nursing Homes. *Educational Gerontology*, *41*(7), 527–542. <https://doi.org/10.1080/03601277.2014.986398>
- Douka, S., Zilidou, V. I., Lilou, O., & Manou, V. (2019). Traditional dance improves the physical fitness and well-being of the elderly. *Frontiers in Aging Neuroscience*, *11*. <https://doi.org/10.3389/fnagi.2019.00075>

Fisher, M., Kuhlmann, N., Moulin, H., Sack, J., Lazuk, T., & Gold, I. (2020). Effects of improvisational dance movement therapy on balance and cognition in Parkinson's disease. *Physical & Occupational Therapy in Geriatrics, 38*(4), 385–399.

Gandy, L., Sy, K., Hamilton, K., Medina, A., Prado, P., Santos, A., Masoud, S., White, C., & Subramanian, S. (2021). Tango together: Developing and implementing dance workshops in a memory care center. *Archives of Physical Medicine & Rehabilitation, 102*(10), e32.

Garcia Gouvêa, J. A., Dias Antunes, M., Bortolozzi, F., Marques, A. G., & Marques Gomes Bertolini, S. M. (2017). Impact of Senior dance on emotional and motor parameters and quality of life of the elderly. *Rev Rene, 18*(1), 51–58.

Guzmán-García, A., Hughes, J., James, I., & Rochester, L. (2013). Dancing as a psychosocial intervention in care homes: A systematic review of the literature. *International Journal of Geriatric Psychiatry, 28*(9), 914–924.

Hamacher, D., Hamacher, D., Rehfeld, K., Hökelmann, A., & Schega, L. (2015). The Effect of a Six-Month Dancing Program on Motor-Cognitive Dual-Task Performance in Older Adults. *Journal of Aging & Physical Activity, 23*(4), 647–652.

<https://doi.org/10.1123/japa.2014-0067>

Ho, R. T. H., Cheung, J. K. K., Chan, W. C., Cheung, I. K. M., & Lam, L. C. W. (2015). A 3-arm randomized controlled trial on the effects of dance movement intervention and exercises on elderly with early dementia. *BMC Geriatrics, 15*(1), 127. <https://doi-org.proxy-etown.klnpa.org/10.1186/s12877-015-0123-z>

Hwang, P. W.-N., & Braun, K. L. (2015). The effectiveness of dance interventions to improve older adults' health: A systematic literature review. *Alternative Therapies in Health & Medicine*, 21(5), 64–70.

Kattenstroth, J., Kalisch, T., Holt, S., Tegenthoff, M., & Dinse, H. R. (2013). Six months of dance intervention enhances postural, sensorimotor, and cognitive performance in elderly without affecting cardio-respiratory functions. *Frontiers in Aging Neuroscience*, <http://dx.doi.org/10.3389/fnagi.2013.00005>

Kaushal, N., Desjardins-Crépeau, L., Langlois, F., & Bherer, L. (2018). The Effects of Multi-Component Exercise Training on Cognitive Functioning and Health-Related Quality of Life in Older Adults. *International Journal of Behavioral Medicine*, 25(6), 617–625. <https://doi.org/10.1007/s12529-018-9733-0>

Kim, S., Kim, M., Ahn, Y., Lim, H., Kang, S., Cho, J., Park, S., & Song, S. (2011). Effect of dance exercise on cognitive function in elderly patients with metabolic syndrome: A pilot study. *Journal of Sports Science & Medicine*, 10(4), 671–678.

Kshtriya, S., Barnstaple, R., Rabinovich, D., & DeSouza, J. (2015). Dance and Aging: A Critical Review of Findings in Neuroscience. *American Journal of Dance Therapy*, 37(2), 81–112. <https://doi.org/10.1007/s10465-015-9196-7>

Lazarou, I., Parastatidis, T., Tsolaki, A., Gkioka, M., Karakostas, A., Douka, S., & Tsolaki, M. (2017). International Ballroom Dancing Against Neurodegeneration: A Randomized Controlled Trial in Greek Community-Dwelling Elders With Mild Cognitive impairment. *American Journal of Alzheimer's Disease & Other Dementias*, 32(8), 489–499. <https://doi-org.proxy-etown.klnpa.org/10.1177/1533317517725813>

- Listewnik, B., & Ossowski, Z. M. (2018). The influence of dance on selected risk factors of falls in Parkinson's disease patients - A pilot study. *Baltic Journal of Health & Physical Activity*, 10(1), 38–45.
- Miotto Nadolny, A., Trilo, M., da Rosa Fernandes, J., Passos Pinheiro, C. S., Ziemer Kusma, S., & Marquine Raymundo, T. (2020). Senior dance as a resource of the occupational therapist with older adults: contributions in the quality of life. *Brazilian Journal of Occupational Therapy / Cadernos Brasileiros de Terapia Ocupacional*, 28(2), 554–574. <https://doi.org/10.4322/2526-8910.ctoAO1792>
- Phoebe Woei-Ni Hwang, & Braun, K. L. (2015). The Effectiveness of Dance Interventions to Improve Older Adults' Health: A Systematic Literature Review. *Alternative Therapies in Health & Medicine*, 21(5), 64–70.
- Prewitt, C., Charpentier, J., Brosky, J., & Urbscheit, N. (2017). Effects of Dance Classes on Cognition, Depression, and Self-Efficacy in Parkinson's Disease. *American Journal of Dance Therapy*, 39(1), 126–141. <https://doi.org/10.1007/s10465-017-9242-8>
- Rehfeld, Lüders, A., Hökelmann, A., Lessmann, V., Kaufmann, J., Brigadski, T., Müller, P., & Müller, N. G. (2018). Dance training is superior to repetitive physical exercise in inducing brain plasticity in the elderly. *PloS One*, 13(7), e0196636–e0196636. <https://doi.org/10.1371/journal.pone.0196636>
- Rodrigues-Krause, J., Krause, M., & Reischak-Oliveira, A. (2019). Dancing for healthy aging: Functional and metabolic perspectives. *Alternative Therapies in Health & Medicine*, 25(1), 44–63.
- Sanders, M. E. (2019). Dance fitness: Older adults give it a whirl. *Journal on Active Aging*, 18(2), 66–72.

Simona, C. D., Silvui, D. A., Floris, S. A., Daniel, D. A., & Zorina, S. A. (2020). Dance Movement Therapy Influences the Quality of Life and Has Behavioral Improvements in Dementia Patients. *Ovidius University Annals, Series Physical Education & Sport/Science, Movement & Health*, 20(2), 91–96.

The Centre for Policy on Ageing. (2011). *Shall we dance report - CPA*. Bupa. Retrieved December 1, 2021, from <http://www.cpa.org.uk/information/reviews/shall-we-dance-report.pdf>.

Thornberg, K., Lindquist, I., & Josephsson, S. (2012). Experiences of healthy elderly participating in a creative dance workshop. *Advances in Physiotherapy*, 14(2), 71–77. <https://doi.org/10.3109/14038196.2012.662696>

Vadineia da Silva, M., Alves Lima, D., da Conceição Silva, T. M., de Carvalho Melo, T. M. T., Pereira da Cunha, V., & Pessoa da Silva, M. N. (2016). Dance: A therapeutic resource in the third age. *Journal of Nursing UFPE / Revista de Enfermagem UFPE*, 232–238. <https://doi.org/10.5205/reuol.7901-80479-1-SP.1001sup201606>

Westphaln, K. K., Regoeczi, W., Masotyia, M., Vazquez-Westphaln, B., Lounsbury, K., McDavid, L., Lee, H. N., Johnson, J., & Ronis, S. D. (2021). From arksey and o'malley and beyond: Customizations to enhance a team-based, mixed approach to scoping review methodology. *MethodsX*, 8, 101375. <https://doi.org/10.1016/j.mex.2021.101375>

Wołoszyn, N., Wiśniowska-Szurlej, A., Grzegorzcyk, J., & Kwolek, A. (2021). The impact of physical exercises with elements of dance movement therapy on the upper limb grip strength and functional performance of elderly wheelchair users living in nursing homes – a randomized control trial. *BMC Geriatrics*, 21(1), 1–14.

<https://doi.org/10.1186/s12877-021-02368-7>

World Health Organization (2020). Ageing and life course. Available online at:

<http://www.who.int/ageing/en/>. doi: 10.1093/acprof:oso/9780199656516.003.0005

Wu, Wei, T.-S., Chen, S.-K., Chang, J.-J., Guo, L.-Y., & Lin, H.-T. (2010). The effect of chinese yuanji-dance on dynamic balance and the associated attentional demands in elderly adults. *Journal of Sports Science & Medicine*, 9(1), 119–126.

Appendix A

Pamphlet of Why Retirement Communities Should Consider Dance Classes



DANCE FOR ALL AGES

DOES YOUR RETIREMENT COMMUNITY OFFER DANCE CLASSES?

EFFECTS OF A GROWING OLDER ADULT POPULATION

Throughout the world, the older adult population is rapidly increasing, due to technology advancements and an increase in medical knowledge. However, aging is also associated with a decline in physical, cognitive, and social and emotional health, such as a decrease in memory, as well as a decrease in muscle tone and muscle mass. A critical factor in maintaining proper health as an individual ages is physical activity. Physical activity is not only beneficial to the physical aspects of the body, but also correlates with positive cognitive and social



DANCE ALWAYS



POSITIVE SOCIAL AND EMOTIONAL EFFECTS

Positive social and emotional effects include an increase in social interactions through dance classes, a decrease in depressive symptoms and improvement in overall quality of life.

MORE INFORMATION

STYLES

Styles of dance that can be offered to this population include a variety of ballroom dancing (salsa, tango, waltz, etc.), jazz, forms of hip hop, Zumba, or even just playing music and the guests can dance however they would like!

LENGTH OF CLASSES

30-60 minute classes at least twice a week are suggested to provide the most beneficial effects. Dance programs may last a longer period of time, typically from 2-6 months.

MATERIALS

No materials are necessary for dance classes! Just make sure to have a large, open space to move, fun and upbeat music, and a good teacher!

IMPORTANCE OF DANCE

Dance is a physical activity that anyone of any age can participate in. Both healthy individuals and individuals with pre-existing conditions can take part in dance classes. Pre-existing conditions may include dementia, Parkinson's disease, mild cognitive impairments, and more. Dance have been proven to provide positive physical, cognitive, social and emotional effects amongst older adults, thus increasing their overall life satisfaction.



WHY CONSIDER DANCE CLASSES?

POSITIVE PHYSICAL EFFECTS

Positive physical effects include improvement in balance amongst older adults, which decreases risk of falling, decrease in blood pressure, increase in muscle mass and muscle tone, and improvement in both posture and endurance.

POSITIVE COGNITIVE EFFECTS

Positive cognitive effects include a decrease in memory loss, executive functioning, such as sequencing or planning ahead of time, and improvements in attention span and problem-solving skills.

Better Balance

Stronger Heart

Bust Stress

Build Confidence



Beat Depression

Burn Calories

Boost Memory

Improve Flexibility

LIVE LOVE DANCE

