2021

Benefits of Dance for Geriatrics

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I am, Therefore I Dance

15 December 2020

Introduction

For many, the word "dance" conjures up images of young, athletic performers on stage or in studios, but it is and can be so much more. Dance acts as a creative outlet, enabling people to express themselves in ways words simply do not allow. It also provides a number of cognitive, physical, social, emotional, and community-building benefits. These benefits are important for many populations, but especially for geriatrics.

Advanced age commonly brings with it a decrease in cognitive and physical skills. Consequently, many members of the geriatric community suffer from a sense of isolation and a lack of confidence due to compromised movement, vision, and hearing. Dance has the ability to empower these individuals. This paper, based on scientifically sourced studies, as well as anecdotal and qualitative evidence, will demonstrate the ways in which dance can benefit older participants including overall balance, mobility, posture, strength, memory, and contentment.

Geriatric Population in the United States

In 2006, the number of people age 65 and older in the United States sat at about 37.2 million. In 2018 this number had increased to an astounding 52.4 million people or roughly 16 percent of the country's total population.[1] As Baby Boomers, Millennials, and members of Generation Z continue to age, the number of people over 65 is only expected to increase. The U.S. Census Bureau projects that older adults will outnumber children under age 18 for the first time in U.S. history by 2034.[2]

Growing older comes with a variety of changes and potential health risks. A 2018 study conducted by the National Center for Health Statistics found that 22.2 percent of noninstitutionalized persons over the age of 65 in the United States were in "fair" or "poor" health and experienced significant challenges in vision, hearing, mobility, and/or cognition.[3] An

article published by the *Journal of the American Geriatrics Society* introduces and describes the term "geriatric syndrome" as something prevalent in most geriatrics. While "geriatric syndrome" still lacks a real scientific definition, "Many of the most common conditions that geriatricians treat, including delirium, falls, frailty, dizziness, syncope and urinary incontinence, are classified as geriatric syndromes."[4]

Geriatrics also are commonly associated with diseases like dementia – including Alzheimer's disease – which is responsible for the rapid decline in cognitive thinking and memory. According to the Alzheimer's Association, "An estimated 5.8 million Americans age 65 and older are living with Alzheimer's dementia in 2020."[5] Unfortunately, the number of people living with Alzheimer's disease, the most common form of dementia, is only expected to increase as the years go on. The Alzheimer's Association predicts, "By 2050, the number of people age 65 and older with Alzheimer's dementia may grow to a projected 13.8 million, barring the development of medical breakthroughs to prevent, slow or cure Alzheimer's disease."[6] Thankfully, dance may be able to act as the "medicine" needed by those affected by dementia and the aforementioned physical deficits many older people commonly face.

Cognitive and Physical Benefits of Dance

A 21-year study led by the Albert Einstein College of Medicine in New York City, examined the effects different recreational activities have on reducing the risk of dementia. The study examined both cognitive and physical activities including reading, writing, doing crossword puzzles, playing cards, playing musical instruments, playing tennis, playing golf, swimming, bicycling, dancing, walking, and doing housework.[7] Surprisingly, results of the study revealed that almost none of the activities examined contributed to lessening the risk of dementia – with a few important exceptions. Reading reduced the risk of dementia by 35 percent, doing

crossword puzzles at least four days a week reduced the risk of dementia by 47 percent, and dancing frequently reduced the risk of dementia by 76 percent.[8] So, why did dance have such a great effect on reducing the risk of dementia compared to the other activities studied? According to Richard Powers, a historic and contemporary social dance professor at Stanford University, the best way to improve mental acuity "is to involve yourself in activities which require split-second rapid-fire decision making, as opposed to rote memory (retracing the same well-known paths), or just working on your physical style."[9] Furthermore, Powers states: "Dancing integrates several brain functions at once – kinesthetic, rational, musical, and emotional – further increasing your neural connectivity."[10]

Another study published by the *Journal of Sports Science & Medicine* found similar results when researchers examined the effect of dance exercise on cognitive function in elderly patients with metabolic syndrome. Metabolic syndrome, commonly associated with an increased risk of cognitive impairment, is rather prevalent in people 60 years of age and older. The group of researchers who conducted this particular study selected a Latin dance, the cha cha, as the form of exercise intervention for their sample size of 26 participants. Study participants immersed themselves in biweekly cha cha classes for six months in order to help produce meaningful data. Despite the limitation of not being able to perform brain imaging, the study was successful in proving that dance exercise for a six-month period improved cognitive function in older adults with metabolic syndrome. Additionally, the study revealed positive effects regarding verbal fluency, word list delayed recall, and word list recognition.[11] The study concluded that, "In light of the growing number of older adults suffering from dementia, our data suggest that the implementation of dance exercise programs may be an effective means of prevention and treatment of cognitive disorders."[12] The findings of this study are further proof that dance is

beneficial to geriatrics suffering from cognitive disorders and that it is successful in reducing the onset of such diseases.

While dance can be seen to have positive cognitive effects for those older in age, it also has positive physical effects. Researchers from Aristotle University of Thessaloniki conducted a study titled "Traditional Dance Improves the Physical Fitness and Well-Being of the Elderly" published in *Frontiers in Aging Neuroscience*. The study aimed to further investigate the ways in which dance benefits geriatrics' physical functioning. The study included 130 participants aged 60 years and older, and a control group of an additional 20 similarly aged participants. The 130 study group members participated in biweekly traditional Greek dance classes for a span of 32 weeks, while the control group did not dance at all. All participants underwent physical assessments both prior and post study based on the Senior Fitness Fullerton Test – consisting of a 30-second chair stand, arm curls, chair sit-and-reach, back stretch, 2-minute step-in-place, and 8 foot up and go – as well as the Stork Balance test. Results of the study revealed statistically significant results for all parts of the Senior Fitness Fullerton Test and improved balance as indicated by the Stork Balance test for 99 of the 130 dance participants.[13] Researchers were able to conclude, "The results of this study show that dancing contributes to the well-being of the elderly with a view of independent and quality living. Maintaining their physical fitness and functional capacity at satisfactory levels, led them to a more qualitative and independent lifestyle while the risk of various diseases is reduced."[14] For a group of people who have been independently functioning for the majority of their lives, the desire to prolong this unassisted lifestyle often is a high priority.

Another study, published by the *Journal of Applied Gerontology*, examined dance as a prevention of late-life functioning decline, specifically among nursing home residents.

Researchers Katerina Machacova, Hana Vankova, Ladislav Volicer, Petr Veleta, and Iva Holmerova used a three-month dance-based exercise series including 189 residents from seven different nursing homes in the Czech Republic to form their findings. Participants of the manipulated group took part in hour-long group dance sessions hosted once a week for three months. The sessions consisted of basic ballroom dances including foxtrot, waltz, cha cha, and cancan. It is important to note that the dance instructors made it their overall goal for each of these classes to be enjoyable for all participants. This led to varied intensity across movements, depending on the abilities of each participant, as well as modifications for those participants who required wheelchairs. Once all data was evaluated – using the get-up-and-go test, Barthel Index, and Lawton IADL Scale – it was concluded that the control group continued to functionally decline while the manipulated group experienced a prevention in deterioration and improved in simple movement functionality.[15] Researchers also noted, "The prevention of deterioration in functional status documented in this study may also have been mediated by a positive effect of the dance intervention on depressive symptoms described in a previous report due to proven relationship between depressive symptoms and functional status."[16] Because dance has the potential to improve cognitive and physical functioning in older people, while simultaneously decreasing depressive symptoms, getting geriatrics into dance classes can be crucial to their well-being.

Social and Community Benefits of Dance

Many seniors, especially those living in retirement communities, experience loneliness and a sense of isolation. This is not surprising. Often these geriatrics have had to leave their long-time homes – perhaps after a spouse's death – to move into a facility filled with strangers.

Dance can play a role in helping these individuals form new communities and, consequently, ease this transition.

Brazilian-based researcher Rosana Ferreira Pessoa led a team that examined the social benefits of dance; their findings were published in 2019 in the *Journal of Physical Education & Sport*. They found that dance provided a significant increase in geriatric participants' wellbeing and socialization, noting "more willingness to participate in other social activities, happiness, and motivation in the face of new friendships" formed through their dance classes.[17]

Seniors' desires to have music and community emphasized within dance classes are addressed in dancer, choreographer and author Diane Amans' book *Age and Dancing: Older People and Community Dance Practice.* Through personal stories and vivid imagery, Amans, shares the stories of a woman referred to as "Auntie Mary" and a man named "Patrick," both of whom participate in regular dance activities. Dance artist Amanda Fogg learned of her 90-year-old Auntie Mary's enjoyment of dance during a phone call. Fogg was used to hearing music in the background of the pair's phone calls and when she finally asked about it one day, her aunt responded by saying, "'Oh yes – it's something I put on to get myself going a bit.'"[18] Fogg later discovered that her Auntie Mary danced every day – not just on those days she heard music lingering through their phone calls. In fact, "She performs a set sequence that she has put together herself and works through, to various pieces of music, 'Like "Anchors Away" – you know – lively tunes that make you feel like dancing.'"[19]

Patrick, while also a fan of dancing from home, had a very different, yet impactful, experience with the art form. As Patrick neared the end of his life, he met a woman named Lucinda Jarrett who happened to be in the same hospice center. Patrick danced with Lucinda "so that he could keep connected with people who were important to him."[20] According to Amans,

"He valued the opportunity to be outside the medical narrative which dominated the rest of his life, and enjoyed playful movement experiences with Lucinda."[21] In essence, Patrick found healing by focusing on the joy dance brought him rather than his poor health.

While data is typically the first thing one would turn to when figuring out the effect dance has on seniors' quality of life, these stories act as personal narratives that allow researchers to hear from the heart. Additionally, while neither Auntie Mary or Patrick took part in organized dance classes, they both experienced the joy of moving and presumably increased their functioning – whether or not they realized it.

I have seen firsthand some of the effects dance can have on geriatrics. In 2018, I led a 12-week series of tap dance classes for seniors at Tacoma Lutheran Retirement Community in Washington state. My students, ages 75 to 96, were all seated for the classes and followed along with simple warm-ups and choreography. Although I did not conduct a formal study, it was easy to see even the least mobile of my students enjoy stomping their feet and singing along to Doris Day and Frank Sinatra. I also got to witness my students improve their overall mobility and balance while simultaneously building a community of new friends within their retirement center.

Effective Dance Class Structure for Seniors

So, what does an effective dance class for the geriatric population look like? In an article published in the journal *Arts in Psychotherapy*, researchers present a class format that has proven to be beneficial to an array of senior citizens. The classes, led by dance teachers who had nursing backgrounds, lasted fifty minutes a week for a total of twelve weeks.[22] The classes were broken into six different stages:

> 1. *Setting up and presentation* (5 minutes): presentation of participants and group awareness exercise; 2. *Warm-up* (10 minutes): sensory awakening (self-massage, visual attention,

> hearing and breathing) and muscular awakening (gradual movements); 3. *Coordination exercises* (10 minutes): exercises and improvisations with themes and exercises that stimulate balance (simple sequences by imitation, and exercises based on strength and flexibility movements); 4. *Dance exercises* (15 minutes): alone, in couples or group dancing (tango, waltz, and classical dance movements); 5. *Winding down* (5 minutes); 6. *Feedback* about the session (5 minutes).[23]

While the researchers of the present study observed that one dance session per week might not be enough for seniors to gain maximum benefits, the class structure is reasonable.

Wake Forest University faculty members Christina T. Sorianoa, associate professor of dance, and Glenna Batson, associate professor of health and exercise science, collaborated to develop dance curriculum for those with Parkinson disease, a common age-related nerve-degenerating ailment. Their research, "Dance-Making for Adults with Parkinson Disease: One Teacher's Process of Constructing a Modern Dance Class," was published in 2011 in the journal *Research in Dance Education*. Sorianoa ultimately decided upon 60-minute classes, "scheduled in the late morning to give participants ample time to start their day, eat, have their medicine take effect, and get to the class without feeling rushed."[24] She took care to hold the classes in a large studio accessible by elevator. Each class included a seated warm up, standing locomotion exercises, stability and stretching exercises, improvisation, and collaborative choreography. As she designed her classes, Soriano emphasized four approaches:

1. Pare down exercise complexity.
2. Create movement phrases that simulate and support everyday movement patterns.
3. Encourage each participant to generate movement rather than simulate the instructor's movements.
4. Link individual contributions from improvisation into a piece of choreography to support egalitarian dancing.[25]

The studies referenced in my paper each held dance classes ranging from 50 to 60 minutes. That time period is long enough to get one's heart rate up, but not so long that participants would start to lose interest, tire, or become distracted.

Dance as a Memory Trigger in Relation to Music

While dance is typically thought of as a physical activity, it challenges the mind with memorization, coordinating different series of movements, and staying on musical beats. Dance also provides an emotional outlet and oftentimes elicits emotions from deep within. Furthermore, certain movements and songs can bring about different memories. In a recently released video, former prima ballerina Marta C. González caught worldwide attention when she heard the music to Pyotr Ilyich Tchaikovsky's "Swan Lake" and instantly performed the arm choreography.[26] González, who suffered from Alzheimer's disease, danced in "Swan Lake" back in the 1960s. For someone to have one of the most aggressive forms of dementia and remember choreography from nearly six decades ago is truly remarkable but not surprising considering the science behind it.

For most Alzheimer's patients, long-term memories are less affected in the early stages of the disease because those memories have been more firmly established. Carolyn Fredricks, a professor at the Yale School of Medicine, suggests "The motor memory associated with music is less vulnerable than other parts of the brain heavily affected by Alzheimer's."[27] Essentially, the soundtrack of "Swan Lake" acted as a trigger and caused González to remember something that occurred long ago. This makes sense because the video was originally shared by the Asociación Música para Depertar, a Spanish organization that uses music therapy techniques with those suffering from various types of memory loss.

This concept of dance as a memory trigger in relation to music received scientific consideration from a 2014 study based out of Mie University in Japan. The team, led by dementia researcher Masayuki Satoh, found that "Physical exercise combined with music produced more positive effects on cognitive function in elderly people than exercise alone."[28]

This is presumed to be because dance requires multitasking: Dividing a participant's attention between bodily movement and processing music, all while keeping time with the beat.

Conclusion

When the research is considered, dance can be seen to clearly provide benefits to the geriatric community. The quick decision-making and new motor pathways dance requires of its participants improves cognitive functioning. At the same time, the repetitive nature of dance exercises, as well as the coordination required in order to perform certain movements, increases physical functioning. Additionally, dance builds community and allows for social interaction – something so desired by the elder population – even if no words are being spoken. When all of these factors are considered, dance becomes an obvious route for social, emotional, and physical healing within the geriatric community. Furthermore, for a group of people who have seemingly had their independence taken away, dance reinforces creative production and teaches new ways to perform old habits.

Because of the resounding positive impact dance can have on geriatrics, those 65 and over should seek out classes they can attend. At this point, dance classes for geriatrics can be hard to come by – especially in rural communities and in-patient settings. Dance educators must feel empowered to reach out to their local community centers, retirement homes, and skilled nursing facilities to set up weekly classes. A great first step could be contacting the activities director at one's local retirement community. Even teaching as a volunteer has its own rewards, most notably in the joy you can bring to elderly students. Those who regularly work with the elderly population must also realize that geriatric programming should include more than bingo and crossword puzzles – movement is critical.

What should you take away from all of this information? Dance. Even if you have no formal training, start moving, start dancing. Dance often. The sooner you start, the better. Individuals who dance at a younger age can start to build up their cognitive reserve now. You do not have to be young to dance and you do not have to be a senior citizen in order to feel the positive effects dance provides to one's health. So, do a little jig every now and then, and imagine the impact you are making on your future quality of life. Research has proven, you will thank yourself someday.

Notes

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