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Dance and Well-being in Older Adult Communities: Exploring Efficacy as a Mediator

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Abstract

As the population of older adults expands, it becomes increasingly important to develop effective interventions to ensure high levels of well-being. Previous research in a variety of populations has shown that dance produces broad benefits including improving physical mobility, social relationships, autonomy, and self-image. Given this, the present study attempted to clarify the mechanisms through which dance might lead to these improvements. Specifically, this research examined the role of self-efficacy, or beliefs that one can accomplish certain tasks, have in explaining the psychological benefits of dance. I hypothesized that when dance is a social activity it instills a sense of connectedness, which in turn benefits well-being. I also hypothesized that because dance encourages creativity and improves sense of control, it positively affects self-efficacy, which in turn improves well-being. In order to test these hypotheses, I collaborated with nearby centers for older adults and utilized a pretest-posttest design to examine changes in well-being following a one-hour dance class. Participants completed existing measures of general efficacy, physical efficacy, loneliness and well-being. One week later, they participated in an hour-long, seated dance class based in a curriculum titled "Dance for Veterans" and then completed the same measures as at pretest. Do to a sample size of N=9, there are no significant results. Further research in this area is crucial as the population continues to age. Existing dance programs are easily replicable and may provide aging individuals an opportunity to creatively engage their bodies while building efficacy and well-being.

Dance and Well-being in Older Adult Communities: Exploring Efficacy as a Mediator

Stemming from factors such as the rapid growth in birthing-rate during the post-war baby boom and elongated life expectancy, the population of individuals over the age of 65 is expected to double in the next forty years (Ortman, Velkoff & Hogan, 2014). While the population of older adults increases, it becomes essential to confront the hindrances to quality of life that accompany aging. As individuals age, many confront declines in physical health, mental clarity and social support (Grimby, 1993; U.S. Center for Disease Control, 2003). Because of this, social scientists have turned their attention toward increasing well-being for the growing community of older adults. The research presented here will look specifically at the effects of a dance intervention on well-being and efficacy in older adults.

Creative Programs

Currently, researchers are turning to creative programs to improve health and happiness among the aging community. Across the country, geriatric care workers are collaborating with artists to involve older adults in painting, poetry, dance, music and other arts. Reflecting on the benefits of this engagement, Janine Tursini, the director of Arts for the Aging commented, "The arts open people up, giving them new vehicles for self-expression, a chance to tell their stories. The programs capitalize on assets that remain, not on what's been lost" (Brody, 2016).

Supporting the notion that artistic programs provide broad benefits to aging participants, researchers at George Washington University investigated the effects of involving older adults in comprehensive art programs (Cohen, 2006). Cohen recruited independently living individuals over the age of 65 to participate in weekly community engagement groups 9 months out of the year for 2 years. 150 of his participants were assigned to non-artistic programs, and 150 participants partook in an art and culture based intervention group led by professional artists.

Those in the art-focused group also attended performances and worked on a long-term artistic project. Cohen utilized five different measures of physical health, mental health and social interaction. Through this, he discovered that seniors who participated in cultural experiences with professional artists over a period of two years demonstrated improved health, fewer doctors visits, fewer falls, less depression and less loneliness than those participating in ordinary center activities.

While this study established the benefits of general artistic programs, others researchers have narrowed the lens to investigate the specific benefits of dance. In an effort to enhance physical and mental wellness in a rural community in the United Kingdom, Lincolnshire's Health and Wellbeing Fund supported the development of a local program entitled Dance4Life (Stickley, Paul, Crosbie, Watson, & Souter, 2015). The program aimed to train professional and volunteer teachers to provide access to a variety of dance classes. In doing so, they generated 34 new dance classes and gained over 1,000 participants. Researches at the University of Nottingham combined quantitative measures about health ideals and previous experience with qualitative interviews and focus groups to evaluate the success of this program. The researches restricted data collection to dancers who had attended 8 or more classes. Of those, they received 330 completed surveys, 74.5% of which were from women over the age of 50-years-old. In addition to 97% of the dancers stating that they enjoyed the experience, participants reported improvements in well-being (75.5%), energy level (66.1%), self-expression (57%), and social relationships (75.2). Qualitatively, participants recognized the dance classes as a space to be creative, a reminder of their past experiences, and a tool to refine their cognitive and physical strength. This research not only evaluated the effectiveness of this specific community dance program, but identified the holistic benefits that dance provides both mentally and physically.

The aforementioned studies on dance and other artistic programs clearly demonstrate the broad benefits of creative interventions for older adults. Because these studies incorporated larger timelines and had access to greater resources such as professional artists and dance teachers, the present study uses a more concentrated intervention, which was taught by the author of this paper. Further, the present study targets individuals living in senior care facilities who tend to have lower health ratings than participants in the previous studies. For this reason, this study utilizes a dance intervention that takes place entirely seated and encompasses all level of ability.

Potential Mechanisms

Beyond recognizing that dance and other creative programs provide a range of benefits for older-adults, the present study aims to examine *how* and *why* this is. In deciphering this mechanism, the construct of self-efficacy is central. Self-efficacy is defined as a sense of contribution or control in one's own life (Bandura, 2010). Individuals with high levels of self-efficacy feel empowered to affect specific outcomes in their lives while those with low levels of efficacy believe that much happens outside of their control. In his research, Bandura argues that older adults experience diminished efficacy (2010). By enhancing aging individuals' sense of efficacy, one might also enhance their overall wellbeing.

Langer and Rodin demonstrated the significance of efficacy through their investigation on the effects of personal responsibility among older adults (1976). The researchers delivered a speech to one floor of a senior living facility about the facility's role to care for each resident and the caretakers' wishes for their happiness. These residents were then given a plant and told that their caretakers would tend the plant for them. For the experimental group, researchers gave a separate floor of residents a speech about their personal responsibility in creating their own

happiness. Residents of this floor were also given a plant but were made responsible for watering and caring for it. Three weeks after the speeches were given, residents in the experimental group showed a significant increase in happiness, activity and alertness in comparison to the control group. That is, residents who were reminded of their own personal responsibilities showed vast increases in well-being. Langer and Rodin's study shows that as older adults confront the challenges of aging, such as moving to a care center, it is important to prime their sense of control. Through encouraging a sense of efficacy, individuals become empowered to pursue higher levels of well-being.

Self-efficacy is a multi-faceted construct which can be refined to specific categories including health self-efficacy, measuring one's perceived ability to change one's health, social self-efficacy, measuring one's confidence in relating to others, and academic self-efficacy, measuring students' belief in their potential to succeed academically (Smith & Betz, 2000; Wallston, Stein & Smith, 1994); Pajares & Schunk, 2001). The present study will focus on two types of efficacy. The first, general self-efficacy, is one's broad sense of control. This is an overarching sense of efficacy and encompasses all aspects of one's perceived control. The second, physical self-efficacy, specifically looks at one's confidence in movement and balance. This construct is particularly interesting because of the high rate of falling in older adults and the physical strength and coordination required in dance (Stubbs, Patchay, Soundy, & Schofield, 2014).

Dance and Efficacy

As an art that challenges its participants to connect mind and body, dance has the capacity to increase both general and physical efficacy. Aiming to analyze the effectiveness of creative therapies, Brauninger conducted an international survey with 113 Dance Therapists in

order to examine the benefits of Dance Therapy (Bräuninger, 2014). Through this, he discovered themes of improved physical mobility, regulation of sensory decline, coping with weariness, improved social relationships and a sense of belonging. Most interestingly, therapists noticed that their dancers gained autonomy and a sense of accomplishment through learning new types of coordination and creating something new with choreography. Through physically creating a new dance, individuals can realize their ability to bring something beautiful to the world.

Similarly, researchers used Argentine Tango with patients who had Parkinson disease to improve balance and mobility (Hackney, Kantorovich, & Earhart, 2007). 38 subjects were divided so that half participated in 20 hours of tango dance and half completed 20 hours of exercises. After 13 weeks, the Tango dancers not only demonstrated better balance and flexibility, but showed more confidence in these areas. The tango dancers' sense of confidence that they would not fall and had more control can be translated to physical efficacy.

Hypothesis

Combining the aforementioned studies, the present research aims to investigate efficacy as a mediator between dance programs and improvements in well-being among older adults. Beyond hypothesizing that dance will lead to increased well-being, this study tests two hypotheses: 1. Participants in a dance intervention will experience increased General Efficacy, which will lead to increased well-being, and 2. Participants in a dance intervention will experience increased Physical Efficacy, which will lead to increased well-being.

Method

Participants

Residents at Sunrise Senior Living Center in Playa Vista and Manchester Manor Convalescent Hospital in Inglewood were recruited to partake in a study in which they would

complete two sets of surveys and engage in an hour-long dance and movement class. Over 30 individuals partook in the dance class, however, only 8 females and 1 male between the ages of 58 and 91 were able to complete both sets of surveys. The mean age of participants was 75-years-old with a standard deviation of 12.38 years. Looking at ethnic background, 55.6% of participants identified as Caucasian, 33.3% of participants identified as African American and 11.1% of participants preferred not to answer. Participants identified their current health status on a 5-point Likert scale ranging from "poor" to "excellent" and showed an average health rating of 2.55 out of 5. Participants did not receive monetary incentives but did receive one free hour-long dance class followed by light refreshments.

Materials

Dance intervention. The intervention in this study was an hour-long session of seated dance modeled off of a curriculum titled "Dance for Veterans." Wilbur, et al. originally created this holistic movement program for the Los Angeles Veterans Association (2015). Although the timeline of this study only allowed for one dance session, the program is designed to meet regularly over time. The entire class can be completed seated in chairs.

This curriculum was chosen because of its emphasis on "Somatic Principles," "Collaborative Dance Making" and "Social Entrainment" (Wilbur, et al., 2015). By focusing on somatic principles, the teachers ask dancers to connect their minds and bodies, providing them with new strength and body awareness. Prioritizing collaborative dance making allows the students and the teacher to dance together as one unit. Instead of asking students to merely follow along, each dancer is invited to contribute his or her own choreography to exercise a sense of creativity. Finally, social entrainment emphasizes that the dance must take place together, with others, in a community. The author of this paper chose to teach this specific

curriculum because of its comingling of physical, creative, and social mechanisms.

Following this curriculum, the intervention in this study began with breathing and a modified-yoga Sun Salutation. Next, the class moved through the "Brain Dance," a movement sequence developed by Ann Greene Gilbert to develop connectedness between the mind and body (Gilbert, & Rossano, 2006). It begins with sensory stimulation through tapping and squeezing each limb, and then continues to coordinate the body's limbs with tasks like connecting one's right leg and left arm in front of the bellybutton. After this warm up, the class practice moving as a group to the music using different marching patterns. Then, the instructor taught a dance to Frank Sinatra's "New York, New York". Finally, the class was invited to create their own dance. Each dancer spoke their name while performing a gesture. The class then accumulated each participant's movement until the entire class's gestures linked together into one dance. This is the climax of the class as many participants realize they have the capability to create a dance while learning the names of their peers. The class ends with a stadium-style wave around the room to say goodbye. Each class is accompanied by music of familiar artists such as Glenn Miller and the Beatles. The average participant enjoyment rating of the dance class was an 8.75 out of 10.

Measures. In an effort to maintain a manageable survey length for older adults, this study utilized short forms of four well-established measures of well-being and efficacy. The Positive and Negative Affect Schedule (PANAS) was used to gauge participants' immediate affect before and after the dance intervention (Thompson, 2007). The measure presents ten emotions that participants rank on a 5-point Likert scale ranging from "very slightly or not at all" to

"extremely" (Positive Affect: Pre α = .86, Post α =. 97; Negative Affect: Pre α = .10[1], Post α = .94). It includes questions such as "At this present moment, indicate to what extent you feel upset" and "At this present moment, indicate to what extent you feel inspired." The second measure of well-being, the UCLA Loneliness Scale (ULS-6) presents six statements revealing lonesomeness such as "I lack companionship" (Neto, 2014). Participants respond on a 5-point Likert scale ranging from strongly disagree to strongly agree (Pre α =. 87; Post α = .640).

General efficacy was measured using eight statements about one's beliefs such as "I will be able to achieve most of the goals that I set for myself" (Chen, Gully, & Eden, 2001). Participants responded on a 5-point Likert scale ranging from "strongly disagree" to "strongly agree" (Pre α = .96; Post α = .92). Physical efficacy was measured using the Falls Efficacy Scale, which presents 10 questions about one's capability to perform daily tasks such as "How confident are you that you can get in and out of bed without falling?" (Tinetti, Richman & Powell, 1990). Participants rated their confidence on a 10-pointe Likert scale ranging from "not at all" to "extremely" (Pre α = .98; Post α = .98). Participants also rated their enjoyment of the dance intervention from 1 to 10 and wrote qualitative comments about their dance experience.

Procedure

This study utilized a pre-test/post-test design in order to assess a change in participant well-being and efficacy across the dance intervention. Residents at Sunrise Senior Living Center and Manchester Manor Convalescent Hospital were gathered in their respective centers one week prior to the dance intervention to complete the initial round of questionnaires. The following week, residents participated in the hour-long dance session and then completed the same set of questionnaires for the second time.

[1] After reviewing the data, there seems to be no obvious reason for this low alpha and so the researchers attribute it to variability within a very small sample.

Results

A paired-samples *t*-test was conducted to compare participants' ratings of well-being and efficacy before and after the dance intervention. There were no significant increases in Positive Affect, Negative Affect, General Efficacy, Falls Efficacy or Loneliness. The greatest change occurred across General Efficacy Pre (M= 3.26, SD= .85) and General Efficacy Post (M= 3.58, SD= .84) conditions; t (8)= 1.38, p = .26, however this was still insignificant (Figure 1). Because of the small sample size, we were not able to test either hypothesis for efficacy as a mediator between dance interventions and improved well-being (Figure 2).

Discussion

In contrast to the hypothesis, the data displayed no significant changes in well-being or efficacy. This can be largely attributed to the sample size of N=9. Although slight, the increase in mean in Positive Affect, General Efficacy and Falls Efficacy and the decrease in Negative Affect provides evidence that we can look forward to significant improvements in well-being with a larger sample population in the future. Most interestingly, the largest improvements were in general and physical efficacy. Despite not having enough data to test the model of efficacy as a mediator, this suggests that participating in a creative dance class benefits one's sense of control and contribution.

In looking at this data, it is important to consider the limitations of working with such a sensitive population. Despite recruiting from seven senior living centers in the Los Angeles area, only nine individuals were able to complete the initial surveys, partake in the dance class and complete the second set of surveys. In an effort to avoid further attrition, we were only able to implement one dance class per center but would ideally be able to implement a longer curriculum. Were participants able to continuously attend dance classes, we would expect to see

more drastic improvements. Finally, many participants had a difficult time completing surveys and so it would be beneficial to use an oral interview assessment in the future.

It is crucial to continue examining the "how's" and "why's" of improving quality of life for older adults. Every human is continually aging, and as our loved ones and we approach older adulthood, it becomes vital to seek the best quality of life possible. Currently, there is very little research into the mechanisms of improved well-being at the end of life. Through exploring these mechanisms and providing links between constructs such as efficacy and well-being, we will be able to create better programs to maximize older adults' quality of life.

A recent New York Times article suggested that programs like Medicaid include coverage of costly and potent medications but neglect holistic programs that can greatly benefit quality of life (Brody, 2016). Following suite of programs that utilize the arts such as Dance for Veterans in Los Angeles, Dances for Variable Populations in New York, and EngAGE throughout Southern California, we can easily develop programs to benefit older adults.

During this research, we saw a vast difference between the programs available to individuals living in an upscale senior living center and a Medicare funded skilled nursing facility. The prior regularly participated in creative and physical activities such as meditation, yoga, and zumba while the lower-income facility had little access to creative stimulation. However, resources are plenty as dancers and other artists continually search for jobs and inspiration within their communities. Universities often have had entire colleges of artists, many of whom partake in service learning experiences while teaching dance in local schools. By utilizing these resources and engaging older-adults in activities that encourage their own sense of efficacy and contribution, we can greatly improve quality of life for the generations who precede us.

Martha Graham, the mother of Modern Dance, stressed that "the instrument by which the dance expresses itself is also the instrument by which life is lived: the human body." Unlike painting, reading, writing, or playing an instrument, dance invites one to use the tool of every day breathing, sleeping, eating and walking to create something new. Through this creativity, individuals can invite new purpose to their lives and challenge their bodies to accomplish new tasks. Through utilizing dance as a means of creative engagement for older adults, we invite them to sharpen the tool they already use daily and potentially offer a pathway to improved efficacy and well-being.

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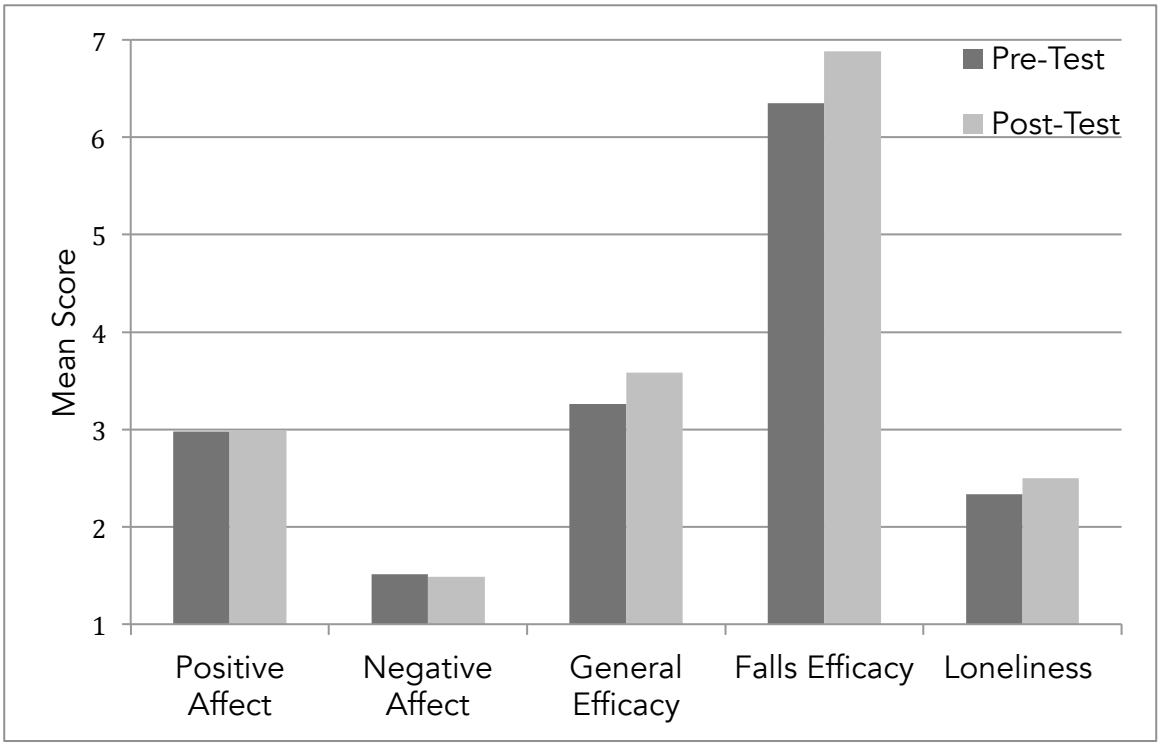

Figure 1: A bar graph depicting differences in mean scores from pre-test to post-test.

Figure 2: A potential mediation model depicting efficacy as the mechanism between dance and improved well-being.