

5-2019

Shall We Dance: Responses of Participants to a Dance Class Designed for Parkinson's Patients

Brittni Lynn McAlister

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UNIVERSITY OF NORTHERN COLORADO

Greeley, Colorado

The Graduate School

SHALL WE DANCE: RESPONSES OF PARTICIPANTS TO
A DANCE CLASS DESIGNED FOR
PARKINSON'S PATIENTS

A Thesis Submitted in Partial Fulfillment
of the Requirements for the Degree of
Master of Arts

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College of Performing and Visual Arts
School of Theatre Arts and Dance
Dance Education

May 2019

This Thesis by: Brittini Lynn McAlister

Entitled: *Shall We Dance: Responses of Participants to a Dance Class Designed for Parkinson's Patients*

has been approved as meeting the requirements for the Degree of Master of Arts in the College of Performing and Visual Arts, School of Theatre Arts and Dance, Program of Dance Education

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ABSTRACT

McAlister, Brittni. *Shall We Dance: Responses of Participants to a Dance Class Designed for Parkinson's Patients*. Unpublished Masters of Dance Education Thesis, University of Northern Colorado, 2019.

The purpose of this research was to describe the responses of participants in a dance class designed for Parkinson's Disease (PD) patients. This study had a total of eight participants—six were adults with PD and participants in the Parkinson's dance classes, one was the other primary instructor of the Parkinson's dance classes, and the other one was a care partner of a participant in the classes.

In this study, the researcher used both quantitative and qualitative methods to analyze the data. The researcher sought to observe the experiences of participants in dance classes designed for individuals with PD and interview all the above described participants in the study.

The questions explored included:

- Q1 What experiences are had by adults with PD that participate in a dance class?
- Q2 How do these experiences correlate with the experiences of other participants?
- Q3 Do any themes emerge as being more universal experiences? Or is each participant's experience unique?
- Q4 Which dance/movement lesson content seems to have the most favorable responses, and which lesson content has the least favorable responses from the PD patients?

This research project demonstrated that the participation in dance classes is perceived to be extremely beneficial by individuals with PD who take the classes, and that the exercises in the classes can be beneficial in multiple ways, including: physically, socially and emotionally.

ACKNOWLEDGEMENTS

This thesis research would not have been possible without all of the participants who generously and graciously gave their time to assist me in the process of conducting this work. I want to thank each of them for their time and for candidly sharing their personal stories and experiences with complete honesty. It was truly an honor.

I also want to thank Lisa Morgan for affording me the opportunity to be a part of this amazing community and for enthusiastically encouraging me always.

A special thanks for their guidance and support goes to Dr. Sandra Minton and Christy O'Connell-Black. Their advice and council through this entire process has been vital to my education and successful completion of the program.

I want to thank my mentor and friend, Stephanie Hamilton, for inspiring me to be an excellent dance educator, and always encouraging me to grow and improve to be the best teacher I can be.

Thank you to my parents, family, friends and students who inspire me to be a better educator and mentor of dance and the arts, and to Heather Fly for showing me that dance is a catalyst for healing in so many ways.

Also, to my beautiful daughter, Norah Lynn McAlister, for showing me an overwhelming love and beauty in this life that I never knew, and inspiring me to work hard and make a difference.

Finally, I would not have been able to complete this journey without the love and support of my husband, Andrew McAlister. This is for you. Your encouragement drove me to the finish line, and your companionship constantly pushes me to be the best I can be. Thank you for being who you are- always believing in us, supporting me, and for always bringing joy and laughter. It is my joy to be your wife, and I am forever grateful.

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CHAPTER I INTRODUCTION

Goal of Thesis

Parkinson's disease (PD) is a chronic, progressive, neurological disorder afflicting 1 to 1.5 million Americans (Samii, Nutt, & Ransom 2004). The process of living with and coping with the disease is all encompassing for patients, and often a complex and confusing road. Not only do patients deal with a number of chronic and increasingly debilitating symptoms, including tremors, balance and coordination problems, and visual difficulty among others, but as a result of the chronic nature of the disease, they also are coping with increased problems in maintaining independence and dealing with a number of psychological symptoms. In her research observing the day-to-day lives of those with PD, Paula Jamison found the following in her study titled *Fighting to Stay "Normal":*

Experiences of People Coping with Parkinson's Disease on a Daily Basis:

Findings demonstrated that individuals with PD experience an extreme amount of stress trying to maintain their physical independence. The current medical model does not provide individuals with PD access to information and referrals to community-based social services that may assist them in conducting their daily life activities. The main service need identified by people with PD was access to more information and help with psychological stressors. Providing people with PD access to social and supportive resources can reduce their stress levels and promote their ability to live independently. (4)

A plan for coping with both physical and psychological symptoms is of utmost importance when developing a care plan for individuals with PD. Research on other chronic diseases suggests a strong link between managing a chronic illness and mental health. In an article titled *Psychosocial and Environmental Factors in the Prognosis of Individuals with*

Chronic Pain and Comorbid Mental Health, two other authors, Valerie Hruschak and Gerald Cochran, summarized a typical PD patient's reaction to stress. They wrote, "An individual's reactions to stress and how they perceive the stimulus can either promote or inhibit practices that support health, which has the potential to shape their overall experience of pain" (79). Thus an individual's appraisal including how they make meaning of the stressful event and their perceptions has the ability to impact health behavior and coping.

Stress can result in a reduced quality of life and increased depression. This is a significant finding in a population already suffering from a chronic, progressively degenerative illness, such as PD which impacts their physical and mental stability (Jamison 7). With this in mind, Jamison also expressed the idea that a comprehensive, effective, and holistic form of care is essential to be provided to a person with PD for treatment and control of the disease. Some examples of this mentioned in the literature include strategies to address the mental, emotional and resource needs of individuals with PD along with supporting physical needs.

Movement and exercise are extremely beneficial for patients with PD, and are often used as a part of an overall treatment plan for such individuals. There are several examples of this, and many different situations where exercise has been explored for patients with PD. In one study, Jess Gibson explored the experiences of PD patients involved in various types of exercise routines, and stated:

In light of the ever-increasing popularity of diet and lifestyle changes as a treatment for a variety of problems, exercise has emerged as a potential solution to the decreased motor function and quality of life associated with aging and, more specifically, Parkinson's disease. (10)

In the remainder of the study, Gibson also asserted that:

The key to using exercise therapy as a treatment for PD, however, is to use a well-rounded exercise program that focuses on maintaining range of motion, strength, balance, and movement speed, and this cannot be accomplished solely through resistance training. (10)

Dance classes for individuals with PD can address both the physical and psychological symptoms experienced. When describing dance programming designed for individuals with PD, Natalie Schultz-Kahwaty explained the following in her thesis, titled *Perceptions of the Experience of Participation in the Dance for PD Movement Program: A Qualitative Study of Individuals with Parkinson's Disease*:

Dance programs for Parkinson's patients] are intended to give people with Parkinson's the power to learn how to cope with their symptoms, keep up social relationships with friends, family, and the public; keep exercising to help with their balance, gait, and mobility; and finally stay physically and mentally happy and healthy. Having to continue to work with these struggles is an unending fight that does not have to be done alone. (2)

Parkinson's is a degenerative disease that is primarily treated with pharmaceutical treatments at this time. However, pharmaceutical treatment for this chronic neurodegenerative disorder is symptomatic, not curative. This fact emphasizes the importance of a multi-faceted approach to treatment that not only treats physical symptoms of the disease, but psychological ones as well. Schultz-Kahwaty also explained that to help individuals cope with the multitude of symptoms experienced both mentally and physically, various forms of modified exercise and creative therapies such as music, dance and drama have been designed. Westheimer (8) and Schultz-Kawhaty (20) indicated that even though the American Academy of Neurology has documented research that shows various forms of exercise therapy provide only minimal amounts of physical improvement, the quality of life for people who have PD as well as their

caregivers could be enhanced by the Dance for PD program classes and other types of movement-based classes. Westheimer illustrated how the imaginations as well as a person's emotions are engaged while participating in dance as a specific physical activity. Some examples of ways that dance can be used as a way to express a variety of emotions include physical activities, such as demonstrating how emotions can look in the body (nervous, excited, sad movements, etc.) or even exploring how certain types of movement can evoke different emotions. Dance can also promote mental stimulation and social interaction.

After observing and interviewing participants in a dance class for individuals with PD, Schultz-Kahwaty noted in her study that:

Groups who share in dance can create lifelong trust, friendship, and an accomplishment that cannot be taken away. People who are diagnosed with a debilitating disease, disorder, or disability may feel depressed and isolated. Programs like Dance for PD offers a place for people who have PD to move and dance with others who share in their daily trials and tribulations. The encouraging and engaging environment of this dance class is designed to help cope with the symptoms that accompany this debilitating disease. The comments from the participants in this study can attest that they may be more likely to overcome the adversities associated with the illness by attending class and experiencing it for themselves. (104)

It is of note that dance classes for individuals with PD not only benefit the participants physically and emotionally, but also allow them to become more resilient. With the diagnosis of a chronic disease, it is extremely valuable to have a treatment plan that deals with both physical and emotional symptoms, and also increases resiliency and coping skills.

Purpose of Study

The aim of this research was to describe the responses of participants in a dance class designed for PD patients. In that process, the essential questions explored in this study included:

- Q1 What experiences are had by adults with PD that participate in a dance class?
- Q2 How do these experiences correlate with the experiences of other participants?
- Q3 Do any themes emerge as being more universal experiences? Or is each participant's experience unique?
- Q4 Which dance/movement lesson content seems to have the most favorable responses, and which lesson content has the least favorable responses from the PD patients?

Hancock and Algozzine (8) and Schultz-Kahwaty (13) believed that a qualitative form of research is appropriate for studying PD patients because it attempts to look at a multitude of aspects that may influence a situation such as living with PD. These authors went on to reiterate that qualitative research is used to better understand how the participants perceive what it is like to live with PD from their personal point of view. This requires spending time in the environment of the dance class being studied.

In this study, the exploration of the PD patients' narrative is used so it would allow the researcher to collect individuals' lived and described experiences and reveal the participants' personal story (Creswell 37). By using qualitative methods, the questions, such as those noted above, can be more deeply explored with the participants. Creswell further explained that the story told unfolds because of the conversational interaction between the researcher and the participant, making this type of research truly a

collaborative effort. Creswell continued by asserting that through semi-structured interviews using an open-ended set of questions, it is the researcher's intent to make the participants feel relaxed enough to describe their perceptions through a freely flowing conversation (129).

In addition to the qualitative focus of this study, there was also a quantitative element that explored the types of exercises used, and the perceived benefits by the PD patients in terms of the different categories of exercises experienced. By taking a look at the range of movements and exercises, and gaining quantitative data on the patients' feedback, themes discovered through the qualitative analysis became clearer and enabled the researcher to dig into them more deeply.

By using a combination of both qualitative and quantitative methods, it was the purpose of this study to create insight into the experiences of an individual with PD in a specially designed dance class. The researcher explored physical, social, and emotional experiences with the class, and allowed the participants to expand on their experiences, including their perceived benefits of taking dance class each week. By exploring these themes, it was also the aim of the study to inspire further research in this area, and shed light on another option for symptom management for individuals with PD.

Significance of Study

It was hoped that this study would inspire others to do additional qualitative and quantitative research on this topic to further expand available resources. It was also hoped that by adding to the documented research and the growing body of literature about the benefits of dance for individuals with PD, more people with PD might choose to participate in dance classes themselves.

In another study done by Schultz-Kahwaty, she observed a small group of adults with PD taking a dance class, and found that dance benefitted participants because people who have trouble functioning from a disability, and have a movement, neurological disorder or disease should continue to seek out exercise that can help them cope with their limited abilities, stay active, social, and happy (11-12). Schultz-Kahwaty also went on to explain the following ideas in reference to dance classes for adults with PD:

In terms of the culture of PD patients, they need to be informed about where to seek out comfortable support groups that are non-clinical and offer an optimistic source of real support that is outside of a restrictive medical community. Those who have been just diagnosed or who have become pessimistic due to the daily problems that come with having to learn to live with PD, are in need of programs that give them support and offer ways to cope with this disease. After insurance supported physical therapy ends, [dance classes for those with PD] offer a continued non-traditional form of therapy that promotes joy and socialization through various dance steps and body movements. (24)

Further significance of this study included the concept of emotional, physical and social support that cannot be found as easily or readily in other traditional forms of therapy. Classes for those with PD combine a number of benefits, that participants otherwise have to find in several separate forms of exercise and/or therapy. It was the hope of this study to highlight the combined benefits of dance as a form of therapy for those with PD, and emphasize how it can be a useful form of therapy to be included in an overall treatment plan.

CHAPTER II

LITERATURE REVIEW

The traits and symptoms of PD will be discussed in this chapter along with traditional treatment and less traditional treatment options. This content makes up the three separate sections in this chapter.

Traits and Symptoms of Parkinson's Disease

According to researchers Samii, Nutt, and Ransom, Parkinson's is the most common serious movement disorder in the world, affecting about 1% of adults older than 60 years. The cause of PD is also enigmatic or difficult to understand in most individuals. The symptoms of PD respond in varying degrees to drugs, and surgery offers hope to patients no longer adequately controlled with drugs (Samii, Nutt and Ransom 1783). The three cardinal features of Parkinson's are tremor, rigidity and bradykinesia or slowness of movement. There is also often postural instability, but in younger patients this trait is often non-specific and also absent in early stages of the disease. Motor features define PD, but non-motor features typically are seen including "autonomic dysfunction, cognitive and psychiatric changes, sensory symptoms, and sleep disturbances" (Samii, Nutt, and Ransom 1783). Autonomic dysfunction is developed when the nerves that control the autonomic nervous system are damaged. The autonomic nervous system controls heartrate, the rate of breathing and digestion. These bodily functions operate without conscious thought.

Even though the primary features of PD involve motor dysfunction, there are a number of non-motor features including neuropsychiatric problems that are highly prevalent and difficult to manage. These dysfunctions can have a “significant impact on physical and mental day-to-day functioning” (Jamison 6). The mental and non-motor symptoms cannot be understated in the management of PD, and they are a crucial part of the experience of individuals with PD. As Jamison summarizes:

Chronic illness serves as a stressor that can be perceived by the individual as being beyond their coping ability (Germain & Gitterman 1996). As a result, people with chronic conditions often experience reduced quality of life and increased depression. Depressive symptoms have been linked with increased disability, impaired functioning, increased morbidity and decreased quality of life (Herrmann, Black, Lawrence, Szekely, & Szalai, 1998; Lesperance, Frasure-Smith, & Talajic, 1996; Penninx, Leveille, Ferrucci, van Eijk, & Guralnik, 1999; Schoevers et al., 2000; Wells & Sherbourne, 1999). This is a highly significant finding among a population already suffering from a chronic, progressively degenerative, illness which impacts their physical and mental stability. (7)

The above information shows us that the non-motor features are significant in the experiences of those with PD, and exploration of how best to manage these symptoms is incredibly important. As with many other chronic diseases, mental and emotional supports are needed to cope with and manage PD.

Among other significant symptoms, chronic pain is also experienced by individuals with PD. According to Hruschak and Cochran, chronic pain is a “confounding matter with significant medical, social, and economic implications for both the individual and society as a whole” (Hruschak and Cochran 573). This chronic pain, and also the perception of pain by the individual, influence the day-to-day experiences of those with PD, and also greatly impact the overall quality of life.

General Treatment Options for Parkinson's Disease

There are a number of approaches that can be used to treat PD. These include medication, surgical procedures and alternative therapies.

Medication

Medication is the primary treatment option for individuals with PD, and there are several different medications that are typically used. According to Clarke in *Medical Management of Parkinson's Disease*, the management of Parkinson's disease has evolved rapidly over the last 10 years with the advent of new drugs, new classes of drugs, and the resurgence of interest in surgery (i22). PD Patients are typically treated by neurologists, and while there are specialists for Parkinson's emerging, it is likely that general neurologists will be the typical medical providers for PD patients for the immediate future.

Some of the medications that are typically used in the treatment of PD include Levodopa, which has remained the "Gold Standard" treatment for PD since the 1970's (Clarke i23; Reichmann and Emre 119). Other medications for PD include: modified release Levodopa, Anticholinergics, Amantadine, Selegiline, and Dopamine Agonists. This is not a comprehensive list, as there are a number of ways that PD is treated with medication, but these medications are the most common alternatives. Clarke also asserted, "In the 'real' world general practitioners continue to diagnose and treat early Parkinson's with Levodopa, only referring patients once motor complications have arisen" (i25). This approach is significant because it demonstrates that medication is typically introduced to manage symptoms once they reach a certain point for the patient. The medical management of PD is largely focused on symptoms and the management of those

symptoms due to the chronic nature of the disease. The side effects of the medication must be taken into account and the individual's unique medical history when considering if and when to introduce medication.

Surgical Procedures

When medication alone is not enough to manage the symptoms of PD, many practitioners and patients turn to surgical options for management of symptoms. Much like medication, the potential side effects of surgery need to be considered before moving forward with this alternative. One surgical option includes spinal fusion to correct spinal pathology resulting from secondary changes of PD. According to an article in *Medical Devices & Surgical Technology Week*, it was found in one study, which looked at the outcomes of 95 patients, that “63% of the patients were judged to have satisfactory outcomes with poor outcomes noted in the remaining 37%” (1). This surgery is controversial and there is reason to believe that it carries a risk of not being effective.

Another study looked at ten participants who had spinal surgeries to alleviate the symptoms of PD. In this study, George Sapkas, et al. asserted: PD patients who have had spinal surgery suffered from a high rate of complications, failure of the surgery and the need for additional operations. This study was a retrospective on a series of cases with the aim of establishing the rate of complications from the surgery. Sapkas reported that:

Ten patients were subjected to spinal surgery from 2005 to 2009. The indications and type of operation varied. Cases of Failed Back Surgery and re-operation were sought. Follow-up was between 6—42 months. All 10 patients presented some clinical or radiological complication. The most common complications were screw pull-out and progressive spinal deformity. Re-operations were performed in 5 patients, while clinical and radiological results were poor in the majority of cases. Patients with Parkinson's disease have a very high complication rate and often have to undergo revision surgery. This particular group of patients should be informed of the increased risk of failure and be closely followed-up on a regular basis (264).

This study shows the potential for surgeries might be to leave symptoms untreated, because the surgery often leaves the individual with a more complicated situation and set of circumstances than before the surgery. After surgery patients may have to undergo follow up surgeries due to complications, and additional mobility restrictions as a result. While surgery can be a viable option for some, it is worth noting that it is not always successful, and can come with its own set of side effects that can impact quality of life.

Another surgical option in the treatment of PD includes Deep Brain Stimulation (DBS). According to the National Institute of Neurological Disorders and Stroke, DBS is most often used to treat the motor symptoms of PD such as tremor, rigidity, stiffness, slowed movement, and walking problems. This procedure is also used to treat essential tremor and dystonia or a movement disorder in which muscles contract involuntarily. At present, the procedure is used only for individuals whose symptoms cannot be adequately controlled with medications. However, only individuals who improve to some degree after taking medication for PD benefit from DBS. While it is another option that works well for a specific group of individuals with PD, DBS is not an option for everyone.

Alternative Therapies

Many individuals with PD choose to complement their conventional treatment with a number of alternative therapies. There are a wide range of options in this category, and according to Peter Ferry, “40% of patients with Parkinson’s disease reported the use of at least one form of complementary therapy for Parkinson’s Disease” (612). In the article based on the study, Ferry described an extensive list of alternative therapeutic options ranging from herbs and supplements to activities aimed to increase mobility.

However, these options were all initiated by the participant and not recommended by their doctor or healthcare professional. This tells us that many individuals with PD are seeking additional options in managing symptoms and are eager to incorporate them into treatment plans and improve the overall quality of their life.

Movement, Music and Dance as Therapy

Among alternative therapies that have been explored for PD, music, movement, and dance are three that have been very successful. Music therapy is beneficial for a number of reasons, including improving speech (Haneishi 1). Speech can be heavily impacted in individuals with PD. The combination of movement and music therapies together, or music-based movement (MbM) therapy, assists the individual in executing movements that might otherwise be extremely challenging. The following was observed by de Dreu et al:

Recent evidence suggests that music-based movement (MbM) therapy may be a promising intervention to improve gait and gait-related activities in Parkinson's disease (PD) patients, because it naturally combines cognitive movement strategies, cueing techniques, balance exercises and physical activity while focusing on the enjoyment of moving on music instead of the current mobility limitations of the patient. (S114)

Combining the benefits of movement and music therapies to engage in MbM, can bring a new level of success to therapeutic movements. It should be pointed out that dance therapy brings all of the benefits of music, movement, and MbM therapies together and also adds an expressive, artistic and connective/communicative element to the classes. Dancers connect with each other, express themselves and use the artistic element of dance to engage with the music.

Along with music, movement and exercise are being utilized more and more in the alleviation of symptoms for individuals with PD. Gibson observed in her research

with exercise therapy and PD that “In light of the ever-increasing popularity of diet and lifestyle changes as a treatment for a variety of problems, exercise has emerged as a potential solution to the decreased motor function and quality of life associated with aging and, more specifically, Parkinson’s disease” (Gibson 10). Exercise alone has been explored as an effective treatment for many PD related difficulties, and according to Gibson, when designing and using exercise therapy as treatment for PD, the following is critical:

The key to using exercise therapy as a treatment for PD, however, is to use a well-rounded exercise program that focuses on maintaining range of motion, strength, balance, and movement speed, and this cannot be accomplished solely through resistance training. Generally, the best exercises to help slow disease progression in PD patients are those that emphasize balance, movement initiation, and movement control (Gibson, 10-11).

While exercise alone can be a beneficial and effective treatment for PD symptoms, the types of exercises used are extremely important. As observed by Gibson, motion, strength, balance and movement speed are important components of an exercise therapy plan. Dance therapy intrinsically integrates these types of exercises in the class design and activities for each meeting, making it a great fit for individuals with PD by combining the benefits of music, exercise and dance as therapy into one community-focused class.

Conclusion

In this study, the researcher hoped to gain insight into the experiences of participants in a dance class designed for PD patients, how those experiences correlated with one another, and if there are any themes that emerged from those experiences.

CHAPTER III

METHODOLOGY

The following chapter explains the methods used to conduct the research on the experiences of adults with PD who took dance classes designed for PD patients. The data included the researcher's observations during classes, and audio interviews with participants, a care partner, and the other class instructor. The data also included a participant survey to provide feedback on exercises done in the class. The researcher conducted this study in a way that was constantly evolving as the project progressed. As interviews were conducted, the researcher clarified questions during the interview for participants to get more relevant answers and more information, and also as the study progressed, the researcher clarified the rating scale on the self-assessment, so participants more clearly understood how to fill out the form.

The researcher's class observations, PD patient interviews and survey used in this study addressed how participants experienced the dance class, what exercises they felt were beneficial to them, and what their overall experiences have been with the dance classes. For the other instructor, the audio interviews were used to record her evaluation of the participants' class experiences, her perception of how she thought they benefited from the class, and her description of overall class outcomes. The researcher used similar methods and addressed similar topics with the care partner, including perceived benefits,

overall experiences and outcomes. The researcher made additional observations about experiences of participants, the care partner, and the other instructor during class as well.

The essential questions explored in this study include:

- Q1 What experiences are had by adults with PD that participate in a dance class?
- Q2 How do these experiences correlate with the experiences of other participants?
- Q3 Do any themes emerge as being more universal experiences? Or is each participant's experience unique?
- Q4 Which dance/movement lesson content seems to have the most favorable responses, and which lesson content has the least favorable responses from the PD patients?

Prior to conducting this study, the researcher needed the approval of the Institutional Review Board (IRB). In order to obtain this approval, a formal narrative was submitted that included a narrative of the study overall, description of the purpose of the study, methods used for data analysis, sample consent forms for the participants, the other instructor, and the care partner, the Self-Assessment Rubric, and the three questionnaires to be used during audio interviews. The researcher also included written permission from the facility where the research took place and was approved to begin the study prior to its onset. The IRB documents can be found in Appendix A and the research instruments in Appendix B.

Research Study

This was an observational and exploratory study that utilized both qualitative and quantitative research. The researcher used audio recordings and notes during interviews to collect data, as well as a written self-assessment rubric collected from each PD patient participant. The interviews and observations were analyzed using qualitative methods,

while the question of which lessons seemed to have the most favorable responses was recorded by the PD patients using a self-assessment rubric. The answers on this rubric were analyzed quantitatively. All participants in the research have been involved in the Moving Through Parkinson's (MTP) dance classes for differing amounts of time ranging from months to years, and the discussions focused on their experiences in the dance classes in terms of how long they have been participating.

The MTP classes focus on dance exercises performed to music. Each class included a seated warm-up, with exercises adapted from Anne Green Gilbert's BrainDance. The BrainDance included movement patterns including those with the following names: Breath, Tactile, Core-Distal, Head-Tail, Upper-Lower, Body Side, Cross Lateral, and Vestibular. By using the exercises in the BrainDance as a warm up, the hope was to mentally and physically stimulate the participants, increase their spatial awareness and heighten their cognitive abilities before moving on to more complex movements and activities. A description of these warm-up exercises can be found in Appendix C.

This seated portion of the MTP class warm-up also included exercises focusing on movement to the music, musicality, balance, range of motion, stretching, and strengthening exercises among others. These exercises were included to increase range of motion, warm up the body, and stimulate participants cognitively by using skills such as patterning, repetition, and problem solving (Appendix C).

Other exercises included combinations of movements that require pattern recognition, memory, and multi-tasking. A number of these exercises, which are performed when standing, challenge participants to intentionally walk through space,

connect with other participants in the room, and challenge their balance. These exercises were included to assist with typical challenges of PD, which include multi-tasking, pattern recognition and recall, and cognitive abilities (Appendix C).

In other exercises, the patients are expected to move around obstacles while focusing on spatial awareness, and correct and execute movements such as standing and walking using proper form. Walking can be extremely difficult for PD patients as coordination, range of motion and balance capabilities decrease, and practicing these movements assists in the improvement of these skills.

Another goal in the MTP classes was to have the patients express themselves through movement performed to music. The intent in having the PD patients move to music was to give them audible cues to help direct their movement. This, in turn, hopefully increased both expression and participation in exercises and movements and allowed patients to accomplish more. For example, if an exercise such as walking across a room is attempted, and a participant freezes or is unable to walk at a certain pace, music will often give them an audible cue, allow them to process the information differently and complete the task. Participants also often sang along to the songs while executing movements which had the possibility of helping them integrate multi-tasking, vocal exercises and memory as well as emotional expression (Appendix C). The MTP classes are typically concluded with a cool down which encourages patients to focus on their breathing, connect with their bodies and with other participants.

Research Site and Participants

The researcher conducted this study at a health center which focuses on healthy aging. The center is associated with a university. The MTP classes were conducted twice

a week at this center and were part of a county PD support group. The researcher is the secondary of two instructors that teach the MTP classes. She has been working with the MTP group for two years. The primary instructor has been working with the group much longer, and many of the participants have been in the class with the primary instructor for several years. While many have participated for some time, some participants are also typically new to the class each week creating a varied dynamic. In general, the participants included in the group change from month to month, but many participated consistently once or twice weekly.

Eight individuals from the MTP group participated in this study. This included six participants with PD, the primary instructor of the class, and one care partner. Each participant was required to complete a consent form. The interviews took place both before and after regularly scheduled classes which were held at the center described above. Each class lasted for an hour and fifteen minutes. Many students were enrolled in the MTP classes, but the researcher observed only those who chose to participate in the study. The PD patients also participated in interviews, filled out Self-Assessment rubrics and consent forms. Audio interviews were based on the interview sheets approved by the IRB committee (Appendix B) and were recorded by the researcher to transcribe and review after the interviews. The primary instructor and one care partner were interviewed as well. All participation in this study was completely voluntary and those involved could decide not to participate at any point.

Instrumentation

There were three research instruments used in the data collection for this study, including the Audio interviews, Self-Assessment Rubrics, and the researcher's observations. All of these research instruments can be found in Appendix B.

All PD patients, the primary instructor and the care partner all participated in the audio interviews with the researcher. The researcher read the interview questions aloud from a printed form and participated in a discussion with each participant when appropriate. The researcher also used the interview sheets to take brief notes during each interview. The researcher kept all personal information of the participants off of any notes, and only noted pertinent information to the study.

During the meeting, the PD patients filled out the Self-Assessment Rubric and rated the exercises commonly performed during the class. The exercises were rated on a 1-10 scale depending on how helpful the PD patients perceived them to be.

Lastly, the researcher observed several classes, and took notes on her observations to identify any additional details that might be used to supplement any of the participants' perceptions of the experiences in the MTP classes.

Data Analysis Procedures

As indicated previously, the study consisted of data that was analyzed both qualitatively and quantitatively. The interviews and observations were analyzed qualitatively, while the Self-Assessment Rubric filled out by the participants with PD was analyzed using quantitative methods. The interviews were done either before or after the MTP classes using the participant Audio Interview Sheets (Appendix B) The questions in

the interviews centered around the experiences and perceptions of those involved with the classes, especially how they perceived certain aspects of the classes.

The Self-Assessment Rubric was the primary method of collecting data which could be analyzed quantitatively since the participants were asked to rate the exercises performed in the class from 1-10 (1 being the least helpful and 10 the most helpful). There were a total of ten questions that addressed exercises that the participants were familiar with and had experienced in the class. The researcher took each participant's answers and created a spreadsheet to record the scores for all the participants on each question and then averaged all participants scores for each question. By doing this, the researcher could see which exercises participants felt were most helpful. Some participants initially thought during the survey that the exercises were to be "ranked" from 1-10, but the researcher further explained and clarified that each exercise was to be ranked individually.

The qualitative analysis was based on all participants' responses to the audio interview questions, as well as observations made in class by the researcher. The Audio Interview Question sheet included several questions focusing on the participants' perceptions of their experiences (Appendix B).

The care partner and the other instructor were also asked questions on similar topics as the questions answered by the MTP class participants, however, these questions were focused on their unique perspectives and observations as the care partner or primary instructor respectively. The researcher asked these questions, and allowed discussions to flow naturally with participants candidly sharing their opinions and experiences with the researcher.

After reviewing the qualitative data collected, it was clear that several themes emerged from the researcher's observations and the participants' answers to the researcher's questions. These themes were also related to several shared experiences between participants and their perceptions of the classes and their benefits.

CHAPTER IV

DISCUSSION

As indicated in the introduction, the aim of this research was to describe the responses of participants in a dance class designed for PD patients, a care partner and the primary instructor for the classes.

This chapter will address the outcomes of the analysis of both the qualitative and quantitative data collected during the course of the study. Data from the Self-Assessment Rubric was assessed quantitatively, and the interviews and observations were analyzed qualitatively. The themes that emerged during the analysis of the qualitative data will be discussed in this chapter along with the results of the quantitative analysis.

Qualitative Analysis

The majority of the data collected during this study was qualitative and collected during the researcher's interviews and her observations of the classes. Once all interviews and observations were completed, the researcher went back through all her notes and recorded audio materials to review participant responses. She also transcribed all the audio data.

In reviewing the qualitative data, after all of the interviews and observations were completed, it was clear that universal experiences and themes emerged from the participants' interviews. Similar themes also emerged from the interviews with the primary instructor and care partner.

Overall, participant responses were overwhelmingly positive. They described various benefits of the classes ranging from symptom management, development of dance skills, and emotional support among others. It seemed that each participant had different exercises or parts of the classes that they felt benefited them the most for their individual symptoms and situations. Overall, all participants found the classes were beneficial physically, emotionally and socially when coping with PD.

Creating a Sense of Community

One advantage of being in the dance classes that was commented on consistently among all participants was the overwhelming benefit of the social component of the class. Many participants discussed the feeling of community and comfort that comes with taking class within the MTP community. Participant 1 described the community created in the classes as “. . . light hearted and open. . . .” and also stated that the social component of the class was “. . . one of the main benefits. . . .” Participants 2 and 3 both explained that a social benefit was that individuals in the class are “. . . all in the same boat. . . .” and that the community created a safe space to share and be heard. Participant 4 shared that the class was beneficial because it was “. . . a good way to make friends. . . .” when that isn’t as easy anymore, because other people may not be able to understand the effects of PD. Participants 5 and 6 said absolutely and without question respectively when they talked about the sense of community created in the MTP classes.

When discussing the social benefits, the care partner and primary instructor also observed the social benefits of the class. The care partner explained that she noticed a change in feeling because the person for whom she cared had become “. . . more socially

confident, and much more connected. . . .” The primary instructor made the following observations:

A common benefit for all is the social interaction and support for each other. Empathetic engagement, discussion of symptoms, and shared resources are all important components of the class time. The shared vulnerability is also key—this is a delicate balance, but I believe when the most learning, compassion/support takes place.

So not only did the participants feel the benefits of the social aspects of the class, but the care partner and primary instructor observed the same benefits as well.

When discussing the social aspect of the classes, it was clear across the board that participants felt more comfortable trying something new (for example, a dance move if they considered themselves to have two left feet), and also felt comfortable expressing themselves and asking others about their experiences. This created a more adventurous class environment with participants eager and ready to try new things. Participants explained that the social environment and community feeling allowed them to really lean into the classes, be candid with one another and the instructor, and push themselves.

The researcher also observed the obvious benefits of the social environment of the class. She found that participants knew one another, and if someone new came to class, they were quickly treated like friends. Discussions appeared to be light-hearted and caring, and it opened the door to discussing and identifying additional ways to help with various PD symptoms that participants experienced on particular days. It was also clear to the researcher that the social connection helped the participants feel comfortable enough to push themselves to try new things, and not be afraid if they were not a good dancer. The light-hearted jokes and singing were all components that helped create a positive environment and a positive experience for all involved.

Learning Choreography

Another common theme that emerged among participants during interviews was the element of learning choreography or dance routines. The participants thought this element of the classes was, in general, the most interesting. Often in the classes, a more complex movement series was taught and put to music and then additional challenges may have been added to create a more complex experience. A sample of a participant's feedback comment about learning choreography was that it was the "... most interesting and fun. . . ." Participant 1 liked the "challenging steps, with the routines and multitasking," participant 2 appreciated the "challenging dance steps that require counting the music," and participant 3 valued this part of the classes for the "dancing because it's the most challenging."

Individual and Unique Comments about the Moving Through Parkinson's Classes

While the social aspect and general benefits of the classes were consistent among participants as well as for the care partner and primary instructor, other various exercises and experiences for individuals were relatively unique. Participant 1 liked the fact that the classes challenged us to be "more aware of what we're doing, making you think," while participant 4 liked "the social aspect the most." Participants 5 and 6 both added that they liked the instruction and the quality of the classes, and participant 5 also added enjoying the playful nature of the classes.

When discussing specific skills that have been gained through taking the MTP classes and the experience of taking dance classes (many for the first time), the responses varied widely. Participant 6 described the experience as "... completely life

changing. . . .” This participant said that the class completely and dramatically changed their quality of life in many different ways based on skills developed in the class. Others agreed that the classes were beneficial and impacted them positively in less extreme ways including feeling “more comfortable being open and upfront about it [PD] and comfortable talking about it.” Others described having an easier time “getting out of a chair” or “walking in crowded places.” These were the more specific benefits which positively impacted quality of life.

Quantitative Analysis

The Self-Assessment Rubric was reviewed and analyzed quantitatively. In table 1, it is possible to see the scores each of the six patient participants provided in answer to question one through eleven. Through the use of this rubric, the researcher wanted to learn if any of the exercises were perceived by participants to be generally more or less beneficial.

Table 1:

Self-Assessment Rubric Results

	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5	Participant 6
Q1	9	9	6	7	5	5
Q2	9	9	8	8	3	5
Q3	10	9	9	9	8	9
Q4	10	10	9	7	5	10
Q5	8	10	9	8	5	10
Q6	9	10	7	10	10	9
Q7	10	10	10	8	10	10
Q8	8	10	8	4	8	10
Q9	9	9	9	8	10	10
Q10	10	10	10	10	7	9
Q11	9	10	6	8	5	9

It can be seen from the above table that the patient participants' individual scores varied to some extent from a high of ten points to a low of three points. The patients' scores can also be discussed by comparing a total of the six patients' scores for each question. Question seven, which was about the perceived effectiveness of the balance exercise, received the highest total score of 58 points, and question ten, which targeted the standing strength exercise received the next highest total score of 56 points. Overall, question one, which was about the mindfulness breathing exercise, seemed to be the least preferred by the patients. This question received a total summative score of 41 points.

Below Figure 1 displays the average of the scores for each question on the Self-Assessment Rubric. As can be seen, this figure demonstrates, on average, participants found all of the exercises mentioned in the rubric and that are were practiced in the class to be helpful to some degree as all the averaged responses are above a score of 5.

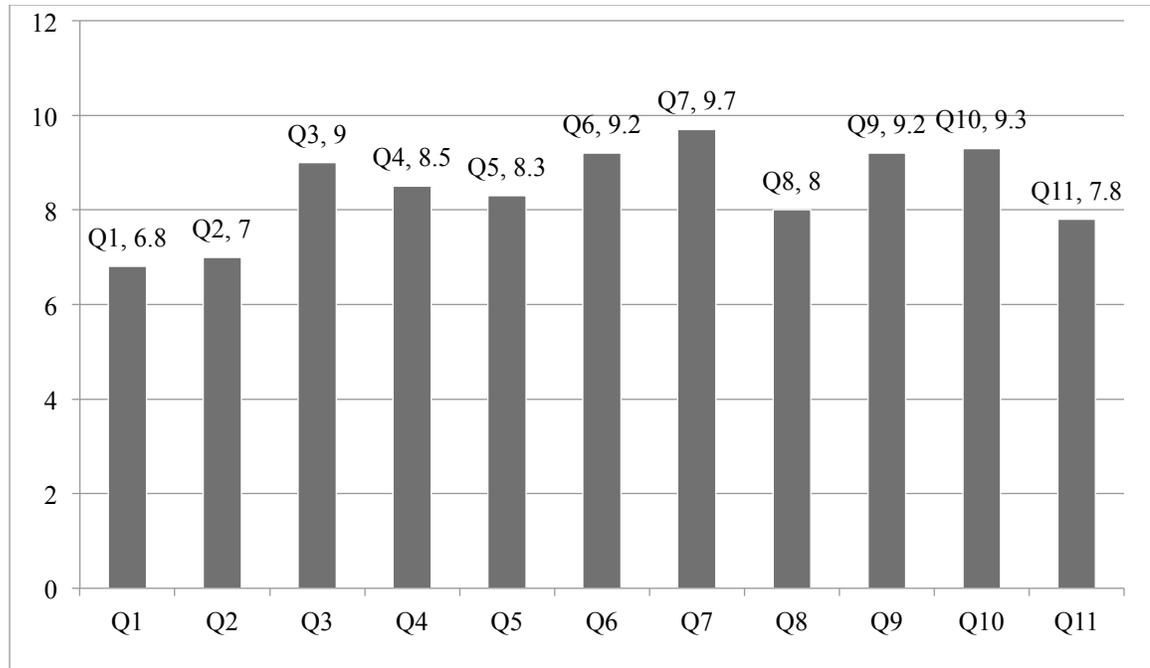


Figure 1

Self-Assessment Rubric Responses and Average Answers

As seen in the above figure, participant feedback showed that the exercises were all helpful to some extent, with little variation in the averaged scores between them. The average score can be seen at the top of each bar in the figure. A description of the exercises targeted in each question can be found in Appendix C.

The exercise that was perceived to be the least helpful (relatively speaking) was the Mindfulness and Breathing (Exercise 1) with an average score of 6.8 out of 10

possible points. The exercises that were perceived to be the most beneficial were the balance exercises. Examples of these exercises were standing behind a chair on one foot, the dot exercise in which participants move in a weaving pattern around circles on the floor that act as obstacles, and the obstacle course in which the patients had to follow particular pathways (Appendix C). The average score for the balance exercises was 9.7. The next three highest average scores were for the exercises targeted in questions 6, 9, and 10 respectively. These exercises dealt with musicality and more complex choreography.

Overall, it seems the exercises that were perceived to be most beneficial dealt with the skills of balance, musicality, strength, and complex cognitive processes such as multi-tasking, problem solving and spatial awareness. These are all abilities that can be seamlessly integrated with dance class content.

The quantitative and qualitative data complemented each other well, since each tells another part of the story that would not have been otherwise identified. The Self-Assessment Rubric confirmed that the complex exercises and movements are seen as being extremely helpful or beneficial to some extent, and the interviews revealed (among other things) that participants felt comfortable enough to explore these exercises and concepts because of the social environment and community of the group.

CHAPTER V

CONCLUSION

Research Findings

The purpose of this research was to describe the responses of participants in a dance class designed for PD patients. A second goal was to learn about the responses and observations of the care partner and primary instructor. This study had a total of eight participants—six were adults with PD and participants in the MTP Parkinson’s dance classes, one was the other primary instructor of the MTP classes, and the other was a care partner of a participant in the class. Some individuals had been taking these classes for years, while others were involved only for months or weeks.

This study included both quantitative and qualitative research. The data was collected through researcher observations, audio interviews, and self-assessment rubrics. The rubric was completed only by the PD patients.

The four essential questions explored in this research were:

- Q1 What experiences are had by adults with PD that participate in a dance class?
- Q2 How do these experiences correlate with the experiences of other participants?
- Q3 Do any themes emerge as being more universal experiences? Or is each participant’s experience unique?
- Q4 Which dance/movement lesson content seems to have the most favorable responses, and which lesson content has the least favorable responses from the PD patients?

Reflections on Research Study

The findings of this study indicated that while each participant's experiences are unique and different, there are many experiences and perceived benefits that were shared. Through the course of this research, it became apparent how the varied nature of the exercises in the classes, and the ability to work on so many skills at once, were beneficial to participants. Another benefit perceived universally by all participants was the social aspect of the classes, and the community feeling of the group. This laid back and lighthearted atmosphere allowed participants to feel comfortable enough to really try new things that they might not otherwise have felt confident trying.

From the feedback of the Self-Assessment Rubric, it was clear that the varied nature of the exercises is perceived as beneficial, and that all of the exercises mentioned were seen by participants as helpful in some way. The highest-ranking on the Self-Assessment Rubric was for the balance exercises with an average score of 9.7. The next three highest scores were for exercises six, nine and ten. These exercises dealt with musicality and exercise, and more complex choreography. The lowest scoring exercise was Mindfulness and Breathing, but this averaged score was still fairly high at 6.8 points.

The experience of moving to music was overall positive and the participants thought these exercises were extremely important. In fact, the expression of this importance was overwhelmingly positive. From the exercises, to the music, singing, and feeling of community, the participants highly valued the time spent in the classes and felt the exercises were beneficial, even if they did not see themselves as dancers. The singing

and light-hearted approach created a mindset to encourage trying new things and express emotions while working on physical skills. In the words of one participant, the dance classes have been “. . . completely life-changing.”

Limitations of the Study

Throughout this project, the researcher was a secondary instructor for the classes and had existing relationships with participants which preceded the beginning of the study. These relationships could have led to potential bias. Other factors that could have influenced the study are the small sample size or the design of the research tools used for the study. With a larger group of participants in the study, better or different results might have been achieved. Other limitations were the length of time that various participants had been in the class. If all participants had been in the class the same amount of time, a better or different outcome it might have been provided. Participants that were not in the class for as long a period might have a different perspective on the benefits of the classes, and how useful certain exercises were for them.

Suggestions for Future Research

Based on the themes identified in this research, and the clear perception of benefits from the exercises and dance classes, more research should be done on this topic. With the management of symptoms being a key goal of PD treatment, classes like the MTP classes could be life changing for participants, allowing them a better quality of life and the opportunity to develop skills that cannot be achieved from medication or other treatment options.

Another interesting research approach would be to explore the benefits of the PD dance classes when compared to other treatment options. Such studies could compare the

management of symptoms when attending the dance classes to the use of medication and surgery alone. The researcher also recommends that consideration of how long participants have been active in dance classes be considered in the future as an important component of the research design.

In conclusion, the researcher believes that dance classes such as the MTP classes are extremely beneficial to adults with PD. The use of music, movement and dance in combination create a synergistic environment that lends itself to healing and having life changing experiences that are worth exploring with further research.

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APPENDIX A
INSTITUTIONAL REVIEW BOARD (IRB) DOCUMENTS



Institutional Review Board

DATE: October 18, 2017

TO: Brittni McAlister
FROM: University of Northern Colorado (UNCO) IRB

PROJECT TITLE: [1142626-1] Shall We Dance: Responses of Participants to a Dance Class
Designed for Parkinson's Patients

SUBMISSION TYPE: New Project

ACTION: APPROVAL/VERIFICATION OF EXEMPT STATUS

DECISION DATE: October 18, 2017

EXPIRATION DATE: October 18, 2018

Thank you for your submission of New Project materials for this project. The University of Northern Colorado (UNCO) IRB approves this project and verifies its status as EXEMPT according to federal IRB regulations.

Brittni -

Thank you for a thorough and clear IRB application for your study. There are no requests for revisions or additional materials. All protocols and documents are verified/approved exempt and you may begin participant recruitment and data collection.

Best wishes with this interesting and meaningful research.

Sincerely,

Dr. Megan Stellino, UNC IRB Co-Chair

We will retain a copy of this correspondence within our records for a duration of 4 years.

If you have any questions, please contact Sherry May at 970-351-1910 or Sherry.May@unco.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Northern Colorado (UNCO) IRB's records.



[REDACTED]

[REDACTED]

October 10, 2017

Brittni McAllister
Department of Dance Education
University of Northern Colorado
Greeley, CO

Dear Brittni,

I am happy to provide this letter of approval for your research project examining participants' experiences in the Moving Through Parkinson's classes at the [REDACTED]. I am serving in an interim capacity as director of the center, and therefore it is important for you to know that the approval of this project is valid for the academic year (through May 2017). If your project lasts longer, the new director will be able to extend the approval. I know you will be working directly with [REDACTED] but please let me know if I can be of assistance to you as you complete the project.

Best,

Lise M. Youngblade, PhD
Associate Dean for Strategic Initiatives, [REDACTED]



CONSENT FORM FOR HUMAN PARTICIPANTS IN RESEARCH
UNIVERSITY OF NORTHERN COLORADO
(Participant Consent)

Thesis Title: Shall We Dance: Responses of Participants to a Dance Class Designed for Parkinson's Patients

Researcher: Brittnei McAlister, Graduate Student at the University of Northern Colorado

Contact Information:

Research Advisor: Dr. Sandra Minton, University of Northern Colorado,
sandra.minton@unco.edu

You are being asked to take part in a research study to document your experience of participating in a dance class designed for Parkinson's patients. Please read this form carefully and ask any questions you may have before agreeing to take part in the study.

What the study is about: The goal in this research is to study the experience of participating in a dance class designed for Parkinson's patients. I will be observing the dance classes and conducting an interview of you as a participant to assess your response to the curriculum. I will also keep a record of my class observations, but only those participants for whom I have permission will be interviewed or described in my observation notes. Interviews will take about twenty minutes for each participant. My research will seek to answer the following questions: 1) What experiences are had by adults with Parkinson's Disease that participate in a dance class? 2) How do these experiences correlate with the experiences of other participants? 3) Do any themes emerge as being more universal experiences? Or is each participant's experience unique? 4) Which dance/movement lesson content seems to have the most favorable responses, and which lesson content has the least favorable responses from the Parkinson's patients?

Risks: The risk for participation in this study is minimal. There would be no more risk than participating in a regular movement class.

Your answers will be confidential: No identifying information will be used for presentation or publication of study results. Only coded or fictitious names will be used. All written data will be stored in a locked file cabinet in the researcher's home. All digital data including audio content will be stored on the researcher's computer and be password protected. Completed consent forms will be retained for three years and then destroyed. Completed consent forms will be stored in Crabbe Hall, room 308, the office of Christy

O'Connell-Black, Dance Education MA co-coordinator. Forms will be taken personally by the researcher to the Crabbe Hall location.

Taking part is voluntary: Participation in this study is completely voluntary.

If you have questions: The researcher conducting this study is Brittini McAlister. Please ask any questions you have now. If you have questions later, you may contact me with the information listed above. Please retain one copy of this letter for your records.

Participation is voluntary. You may decide not to participate in this study and if you begin participation you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Having read the above and having had an opportunity to ask any questions, please sign below if you would like to participate in this research. A copy of this form will be given to you to retain for future references. If you have any concerns about your selection or treatment as a research participant, please contact Sherry May, IRB Administrator, the Office of Sponsored Programs, 25 Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-1910.

Statement of Consent: I have read the above information, and have received answers to any questions asked. I consent to take part in the study.

—

Participant's Full Name (please print)

Participant's Signature

Date (month/day/year)

Researcher's Signature

Date (month/day/year)

Printed Name of Researcher Obtaining Consent

Date (month/day/year)

All consent forms and data will be kept for at least three years beyond the end of the study and was approved by the IRB on 10/17/17.



CONSENT FORM FOR HUMAN PARTICIPANTS IN RESEARCH
UNIVERSITY OF NORTHERN COLORADO
(Other Instructor Consent)

Thesis Title: Shall We Dance: Responses of Participants to a Dance Class Designed for Parkinson's Patients

Researcher: Brittni McAlister, Graduate Student at the University of Northern Colorado

Contact Information:

Research Advisor: Dr. Sandra Minton, University of Northern Colorado,
sandra.minton@unco.edu

You are being asked to take part in a research study of participants' experience of being in a dance class designed for Parkinson's patients. Please read this form carefully and ask any questions you may have before agreeing to take part in the study.

What the study is about: The goal in this research is to study the experience of participants in a dance class designed for Parkinson's patients. I will be conducting an interview with you as the other class instructor to assess the participants' responses to the curriculum. The teacher interview will take about twenty-five minutes. My research will seek to answer the following questions: 1) What experiences are had by adults with Parkinson's Disease that participate in a dance class? 2) How do these experiences correlate with the experiences of other participants? 3) Do any themes emerge as being more universal experiences? Or is each participant's experience unique? 4) Which dance/movement lesson content seems to have the most favorable responses, and which lesson content has the least favorable responses from the Parkinson's patients?

Risks: The risk for participation in this study is minimal. There would be no more risk than teaching a regular movement class.

Your answers will be confidential: No identifying information will be used for presentation or publication of study results. Only coded or fictitious names will be used. All written data will be stored in a locked file cabinet in the researcher's home. All digital data including audio content will be stored on the researcher's computer and be password protected. Completed consent forms will be retained for three years and then destroyed. Completed consent forms will be stored in Crabbe Hall, room 308, the office of Christy

O'Connell-Black, Dance Education MA co-coordinator. Forms will be taken personally by the researcher to the Crabbe Hall location.

Taking part is voluntary: Participation in this study is completely voluntary.

If you have questions: The researcher conducting this study is Brittini McAlister. Please ask any questions you have now. If you have questions later, you may contact me with the information listed above. Please retain one copy of this letter for your records.

Participation is voluntary. You may decide not to participate in this study and if you begin participation you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Having read the above and having had an opportunity to ask any questions, please sign below if you would like to participate in this research. A copy of this form will be given to you to retain for future references. If you have any concerns about your selection or treatment as a research participant, please contact Sherry May, IRB Administrator, the Office of Sponsored Programs, 25 Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-1910.

Statement of Consent: I have read the above information, and have received answers to any questions asked. I consent to take part in the study.

—

Participant's Full Name (please print)

Participant's Signature

Date (month/day/year)

Researcher's Signature

Date (month/day/year)

Printed Name of Researcher Obtaining Consent

Date (month/day/year)

All consent forms and data will be kept for at least three years beyond the end of the study and was approved by the IRB on 10/17/17.



CONSENT FORM FOR HUMAN PARTICIPANTS IN RESEARCH
UNIVERSITY OF NORTHERN COLORADO
(Care Partner Consent)

Thesis Title: Shall We Dance: Responses of Participants to a Dance Class Designed for Parkinson's Patients

Researcher: Brittnei McAlister, Graduate Student at the University of Northern Colorado

Contact Information:

Research Advisor: Dr. Sandra Minton, University of Northern Colorado,
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You are being asked to take part in a research study of the experience of the person for whom you are caring when they are participating in a dance class designed for Parkinson's patients. Please read this form carefully and ask any questions you may have before agreeing to take part in the study.

What the study is about: The goal in this research is to study the experience of the person for whom you are caring when they are participating in a dance class designed for Parkinson's patients. I will be conducting an interview with you as the participant care partner to assess the participants' response to the curriculum. The interview will be about twenty minutes for each care partner. My research will seek to answer the following questions: 1) What experiences are had by adults with Parkinson's Disease that participate in a dance class? 2) How do these experiences correlate with the experiences of other participants? 3) Do any themes emerge as being more universal experiences? Or is each participant's experience unique? 4) Which dance/movement lesson content seems to have the most favorable responses, and which lesson content has the least favorable responses from the Parkinson's patients?

Risks: The risk for participation in this study is minimal, because you will be functioning in your customary role as a care partner in relation to the movement/dance classes.

Your answers will be confidential: No identifying information will be used for presentation or publication of study results. Only coded or fictitious names will be used. All written data will be stored in a locked file cabinet in the researcher's home. All digital data including audio content will be stored on the researcher's computer and be password

protected. Completed consent forms will be retained for three years and then destroyed. Completed consent forms will be stored in Crabbe Hall, room 308, the office of Christy O'Connell-Black, Dance Education MA co-coordinator. Forms will be taken personally by the researcher to the Crabbe Hall location.

Taking part is voluntary: Participation in this study is completely voluntary.

If you have questions: The researcher conducting this study is Brittini McAlister. Please ask any questions you have now. If you have questions later, you may contact me with the information listed above. Please retain one copy of this letter for your records.

Participation is voluntary. You may decide not to participate in this study and if you begin participation you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Having read the above and having had an opportunity to ask any questions, please sign below if you would like to participate in this research. A copy of this form will be given to you to retain for future references. If you have any concerns about your selection or treatment as a research participant, please contact Sherry May, IRB Administrator, the Office of Sponsored Programs, 25 Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-1910.

Statement of Consent: I have read the above information, and have received answers to any questions asked. I consent to take part in the study.

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Participant's Full Name (please print)

Participant's Signature

Date (month/day/year)

Researcher's Signature

Date (month/day/year)

Printed Name of Researcher Obtaining Consent

Date (month/day/year)

All consent forms and data will be kept for at least three years beyond the end of the study and was approved by the IRB on 10/17/17.

APPENDIX B
RESEARCH INSTRUMENTS

Moving through Parkinson's: Participants' Experiences
Audio Interview Questions

Code Number: _____

Date: _____

Participant Interview Questions:

1. How would you describe your experience taking *Moving through Parkinson's* dance classes?
2. What do you like about the *Moving through Parkinson's* dance class?
3. What do you not like about the *Moving through Parkinson's* dance class?
4. Do you think the lessons help you in the management of Parkinson's? If so, how?
5. Are there any specific Parkinson's symptoms that you feel have been positively impacted by taking dance class? What are they?
6. Do you think the social dynamic of the class is beneficial? Why or why not?
7. Which exercises are the most interesting or the most fun?
8. Which lessons or exercises do you feel have been helpful in other areas of your life aside from affecting your Parkinson's symptoms? Why?
9. What skills do you feel like you have developed as a result of taking this dance class?
10. In general, how do you feel about dance?
11. Choose one word to describe your experience with *Moving Through Parkinson's*.
12. What is your biggest take-away from taking dance classes?

Moving through Parkinson's: Other Instructor's Experiences
Audio Interview Questions

Code Number: _____

Date: _____

Instructor Interview Questions:

1. How would you describe your experience teaching *Moving Through Parkinson's* dance classes?
2. Have you noticed any changes in the participants since teaching *Moving Through Parkinson's* classes? If so, what?
3. From your perspective, what do you think are some of the most significant benefits of the *Moving Through Parkinson's* dance classes for the participants?
4. Do you think the social dynamic of the class is beneficial for participants? Why or why not?
5. Are there any specific Parkinson's symptoms you have observed that you feel have been positively impacted by the participants taking dance class? What are they?
6. What specific skills do you feel the participants developed as a result of taking this dance class?
7. Choose one word to describe your experience with *Moving Through Parkinson's* dance classes.

Moving through Parkinson's: Care Partners' Experiences
Audio Interview Questions

Code Number: _____

Date: _____

Care Partner Interview Questions:

1. How would you describe the experience of the person for whom you are caring with respect to taking *Moving through Parkinson's* dance classes?
2. Have you noticed any changes in this participant since taking *Moving through Parkinson's* classes? If so, what?
3. Do you think the lessons help the participant in the management of Parkinson's? If so, how?
4. Do you think the social dynamic of the class is beneficial for the participant? Why or why not?
5. Are there any Parkinson's symptoms that you feel have been positively impacted by the participant taking dance class? What are they?
6. What skills do you feel like the participant has developed as a result of taking this dance class?
7. Choose one word to describe your response while observing *Moving through Parkinson's* dance classes.

Moving through Parkinson's: Observation Sheet

(to be filled out by the researcher)

Date: _____

Number of Participants: Male _____ Female _____

Observation Document:

1. Do the participants execute exercises differently when music is playing vs. when music is not playing? If so, how?
2. Is there any difference in the participants' musicality when the instructor is verbally giving rhythms vs. when music is playing?
3. Describe how the participants look when they arrive. (gait, posture, etc.)
4. Describe how the participants look at the conclusion of class (gait, posture, etc.)
5. What observations stand out during the chair warm-up portion of class? Are there any exercises that elicit a specific or greater response from the participating group?
6. What skills are being worked on during the "center work" portion of the class?
7. How do the participants seem to interact during different parts of class?

Other Observations:
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Moving through Parkinson's: Participants' Self- Assessment Rubric

Code Number: _____

Date: _____

Participant Questions:

On a scale from 1-10 (1 being the **LEAST** and 10 being the **MOST**) please circle how helpful the following dance exercises are to you.

1. Mindfulness and breathing	<p>1 2 3 4 5 6 7 8 9 10</p> <p><i>not helpful ----- most helpful</i> <i>at all</i></p>
2. Chair-based warm ups (for example: arm brushes, head rolls, neck stretches, arm circles)	<p>1 2 3 4 5 6 7 8 9 10</p> <p><i>not helpful ----- most helpful</i> <i>at all</i></p>
3. Coordination exercises (for example: marching, reaches across the body,)	<p>1 2 3 4 5 6 7 8 9 10</p> <p><i>not helpful ----- most helpful</i> <i>at all</i></p>
4. Sitting to Standing exercises (for example: getting up and down out of a chair, walking to the back of a chair)	<p>1 2 3 4 5 6 7 8 9 10</p> <p><i>not helpful ----- most helpful</i> <i>at all</i></p>
4. Seated strength exercises (for example: core chair exercises, half-raises out of the chair)	<p>1 2 3 4 5 6 7 8 9 10</p> <p><i>not helpful ----- most helpful</i> <i>at all</i></p>
5. Walking exercises to music (for example: stopping and starting, walking for 8 counts then freezing for 8 counts)	<p>1 2 3 4 5 6 7 8 9 10</p> <p><i>not helpful ----- most helpful</i></p>

	<i>at all</i>
6. Balance exercises (for example: standing behind the chair with one foot, using dots, obstacle course pathways)	1 2 3 4 5 6 7 8 9 10 <i>not helpful ----- most helpful</i> <i>at all</i>
7. Dance routines to music with a partner or group (for example: the Irish jig, waltz, salsa, partner dancing)	1 2 3 4 5 6 7 8 9 10 <i>not helpful ----- most helpful</i> <i>at all</i>
8. Dance routines to music individually (for example: facing each wall with marches, routines where everyone is dancing together and following the instructor)	1 2 3 4 5 6 7 8 9 10 <i>not helpful ----- most helpful</i> <i>at all</i>
9. Standing strength exercises (for example: wall push-ups, squatting leaning against the wall)	1 2 3 4 5 6 7 8 9 10 <i>not helpful ----- most helpful</i> <i>at all</i>
10. Cool down exercises (for example: at the end of class connecting with the body and the group, deep breathing)	1 2 3 4 5 6 7 8 9 10 <i>not helpful ----- most helpful</i> <i>at all</i>

APPENDIX C
DESCRIPTIONS OF EXERCISES FROM CLASSES

Descriptions of Exercises from Classes

1. **Mindfulness and Breathing:** Participants followed a series of guided cues to breathe deeply and relax the nervous system, and also followed a series of visualizations to center them. This was used both at the beginning and end of class.
2. **Chair-based warm ups** (for example: arm brushes, head rolls, neck stretches, arm circles): Participants used active stretches to warm up muscle groups including arms, legs, feet, hands, etc. and brushing arms to use tactile stimulation to activate nerve endings.
3. **Coordination exercises:** Examples include marching, reaches across the body. Participants marched rhythmically in place, reached across the body to the opposite side, and took turns creating multiple movements to do simultaneously and challenge the brain.
4. **Sitting to Standing exercises:** Examples include getting up and down out of a chair, walking to the back of a chair.
5. **Seated strength exercises:** Examples include core chair exercises, half-raises out of the chair.
6. Walking exercises to music: Examples include stopping and starting, walking for 8 counts then freezing for 8 counts.
7. **Balance exercises:** Examples include standing behind the chair with one foot, using dots, obstacle course pathways.
8. **Dance routines to music with a partner or group:** Examples include the Irish jig, waltz, salsa, partner dancing

9. **Dance routines to music individually:** Examples include facing each wall with marches, routines where everyone is dancing together and following the instructor.
10. **Standing strength exercises:** Examples include wall push-ups, squatting leaning against the wall.
11. **Cool down exercises:** Examples include at the end of class connecting with the body and the group, deep breathing.

BrainDance Exercise Examples

1. **Breath** - Breathe deeply.
2. **Tactile** - Squeeze, tap, pat, scratch, brush all body parts.
3. **Core-Distal** - Reach out with toes, fingers, head, tail and curl back to your core.
4. **Head-Tail** - Move head and tail separately and together in all planes, wiggle spine.
5. **Upper-Lower** - Move all parts of upper half of body, then all parts of lower half of body.
6. **Body-Side** - Move all parts on right side of body, on left side, do horizontal eye tracking
7. **Cross-Lateral** - Move across midline and connect upper and all parts lower body quadrants, do vertical eye tracking.
8. **Vestibular** - Move off balance with swings, spins, tips and rolls on all levels and in all directions.