

A Journey Through Dance

By Cassidy Johnson

A thesis presented to the Honors College of Middle Tennessee State University in partial fulfillment of the requirements for graduation from the University Honors College

Fall 2019

A Journey Through Dance

By Cassidy Johnson

APPROVED:

Angela Ramos
Health and Human Performance

Dr. Sonya Sanderson
Health and Human Performance

Dr. Philip E. Phillips, Associate Dean
University Honors College

Abstract

There is a widespread misconception brought about by popular media that dance is all spray tans and glitter, or better yet, a glorified beauty pageant. Shows like “Dancing with Stars” feature celebrities looking glamorous and daintily twirling around, which in many cases becomes a large part of the population’s only exposure to dance. On the contrary, deciding to learn to dance, and later deciding to compete in dance, has been the most transformative experience of my life. This project strives to prove that dance improves and changes lives. The journey that I have been through and continue to experience has changed my daily life and who I am as a person. In discussing my journey with others over the past few years, I found that every dancer I spoke to has also had some sort of journey through and with their dancing, each uniquely different yet resonating with the same theme: Dancing had changed their life. This project is presented in three parts. The first, a personal narrative of my story with dance. Second, a journal of a trip to Orlando to compete and interview other dancers, and what I learned from that experience. Third, an examination of how what was said in the interviews correlates to modern academic articles on the topic of the many scientific benefits of dance. This project is relevant not only to dancers, but also to anyone who has ever struggled with mental illness, self-esteem problems, weight and health problems, or simply thought they were not good enough to achieve their goals. This project strives to show through firsthand experience and academic agreement that dance is an art, a sport, therapy for a variety of physical, mental, and emotional struggles, and something that is so unique no other activity can capture the incredibly transformative nature of it.

Table of Contents

A Personal Narrative of a Journey Through Dance: Why This Thesis Exists	5
Journal of My Journey to Orlando	13
Interviews and Academia: What do the People and Science Have to Say?	20
Summary of Interviews	20
Selected Interviewee Quotes	23
Science and Academia: Intro	37
Mental Impact	38
Mood: Anxiety, Depression, Psychosis	38
Memory: Alzheimer's, Dementia	40
Trauma: Death, Divorce	44
Physical Impact	46
Neurological: Dystonia, Parkinson's, Brain Tumors, Stroke	46
Muscular/Skeletal: Fibromyalgia, MS, Muscular Degeneration	49
General Health and Wellness: Obesity, Self Image	52
Conclusion	54
Appendix A: IRB Approval	55
Appendix B: Balloon Theory	57
Notes	58

A Personal Narrative of a Journey Through Dance:
Why This Thesis Exists

Dance was something I never thought I should, would, or could do. To understand why this is, flashback in time to three years ago. I had just graduated high school after what I would describe as a strenuous seven years in intermediate education. At the time I graduated, I would often find myself an unhappy person. I was extremely overweight, as I had been for most of my life, a reason for which I was bullied on and off throughout middle and high school. It had given me extremely low self-esteem and put me at risk for health problems like early onset diabetes, heart disease, and high blood pressure. In addition, I spent those seven years struggling with my mental health; anxiety, social anxiety, and depression plagued me to varying degrees all throughout my formative years during school.

Anxiety and social anxiety were undoubtedly the struggles that proved the most challenging moving through school and my young adult life. It was only amplified the lower my self-esteem got, driven by my weight and appearance. It did not help that I quickly gained a reputation as a nerd, enrolled in all advanced classes, the band, the science team, and at least three other extracurriculars at any given time. I was so cripplingly introverted, speaking to new people was terrifying, and I had few friends. Answering phone calls and going through drive thrus, simple tasks, proved terrifying. Even auditioning for honor bands, one of my passions as a musician, was ruined by panic attacks that left me unable to breathe, much less play an instrument. With the pressure to perform academically and in extra curriculums in order to secure myself a place in college, it was easy for me to hide behind books and collapse into a life of homework, after school

practices, and working on the weekends. Social interaction, fitness, and having fun were not on my to-do list.

Hopefully this has provided the full picture as to who I was graduating high school: anxious, introverted, not too fond of myself, and terrified of failure, having spent seven years doing nothing but pushing myself to the limits of academic success. I was thrilled to receive the Buchanan Fellowship at MTSU shortly before graduation, meaning I would finally achieve my dream of moving out of state, and being able to start anew in college. Create a new me, hopefully one I liked more than the current one at that time. That summer it came time to register for classes, and wanting to use the entire 16 hours I was given by the Honors College, I found myself asking my advisor what one credit hour class options were available. That was the question that would ultimately change my life forever.

My advisor informed me that most one credit hour classes were PE classes, and she suggested I sign up for one of those. I immediately balked at the suggestion, as an overweight person who had injured herself three times in marching band and considered walking around the house the peak of exercise. My advisor, however, pushed onward, suggesting social dance, saying it was a “fun” class that many enjoyed. Social, Dance, and PE were all words that I absolutely wanted to stay away from, yet somehow, I went home at the end of that weekend with it printed on my schedule. Panic quickly set in the minute I arrived back home.

My fear of failure reared its head immediately, and I became terrified that I would ruin my GPA failing the social dance class and lose my scholarship. I decided then and there that I needed to find a dance studio and learn how to dance before I went to dance

class in the fall to ensure I wouldn't fail. The first night I drove to the studio, I almost threw up in my car and turned around and went home. I felt committed to at least trying it, however, sitting outside in their parking lot, and forced myself to walk in. I survived the night, but just barely. Ballroom dancing is everything I feared: not only talking to strangers but being in close physical proximity to them. Moving your body in a way not natural to even athletes, much less a person who hardly moves at all. I was mortified by how out of place I looked, but also mystified by newness of the whole experience. I went back two more nights that week, which turned into four nights the next week. Within a month, I was in private lessons or a group class every day, and each day I grew less and less terrified. I began to think that maybe this was something I might want to do beyond some one semester class to fill a credit hour in the fall.

It made no sense, but by the end of the summer, I had become obsessed with dancing. I wanted to improve my skills so badly, I decided I finally needed to undertake the long-foregone task of losing weight. Not only was it hard to keep up with some of the faster paced dances, but I was unable to do movements and progress to more advanced skills at the size I was. By the time I moved out of my hometown in Alabama by the end of the summer, I was down 40 pounds and could dance the basics of over a dozen different styles. Upon starting my social dance class, I quickly realized that I now already knew all of the dances being taught and was delighted sometimes to serve as a teaching assistant and ace the class with flying colors. As you probably have already guessed, I did not stop dancing at the conclusion of that semester.

I went on to lose another 50 pounds throughout my freshman year and totaled around 100 pounds of weight loss within a year. I was more outgoing, increasingly an

extrovert, and overall felt a sense of happiness that I hadn't in a while. I began taking private lessons at a Murfreesboro studio to replace the ones I had been taking back home in Alabama. I was growing rapidly as a person and in my dancing, both in ballroom styles and country styles. The coach I danced with in Murfreesboro specialized in one style called West Coast Swing, which would open the next largest, most daunting chapter of my dance story: competition.

Though I now compete in ballroom dance, my first competition was a West Coast Swing event at the end of my freshman year. I had been waffling between the more relaxed world of country and swing dance competition and the very over the top world of ballroom. However, my coach at the time did not compete ballroom and so I felt as though my choice was made. At that first ever competition for me, I had to face my worst fears: failure and judgement. Going out on a floor in front of hundreds of people, being judged, performing— all of it was things I had sworn off years ago. It seemed like my worst fears had come true when I placed near dead last and was told by another dancer that they could “smell the ballroom on me.” I was crushed by my results and the idea that once again I didn't fit in. At that point my decision was made: I was going to change over to the world of ballroom and see how I fared.

I should say at this point that while dance has been a tremendously positive influence in my life and has impacted it more than anything, the journey has not been all sunshine and rainbows. But I think it is important to discuss the entirety of the journey, not just the pretty parts, because it shows how much stronger dancing has made me, and how much it has taught me about resilience. I used to say that I wished my parents had forced me into dancing at a very young age like many of the girls I danced against, so I

wouldn't be so far behind in training, rakings, etc. That was true until one day when someone said back to me that if I had been forced into it, it wouldn't mean that much to me. I may not even still be doing it. I love it because I made the conscious decision to make dance part of my life. My love of dance gave me the strength to continue doing it even when I felt crushed by it.

I spent the next year and half with my first competitive ballroom coach, both to my sheer excitement and despair. We started going to competitions within a few months of dancing together to similar results as those I received in the country/swing world. Last place finishes across the board. I loved the thrill and excitement of competing, but I started feeling that same old feeling of not being good enough again. I continued to lose more weight than necessary, thinking if I weighed less that I would become more in the judge's eyes. It didn't help, and instead made me look ill and left me feeling terrible. Between that and the constant disagreements with my coach, and the pressures of life outside of dance, my anxiety started creep back in. With every competition and last place mark, it seemed to rear its head again, and worse each time. I wondered if I was good enough, or would I ever be good enough? Should I quit dancing altogether?

My coach's style of teaching simply did not mesh well with my personality- while it would be effective to motivate some, it only caused breakdown in our communication. I would express concerns about results and how to improve them, and his concerns were elsewhere, already thinking of future events. His teaching style emphasized isolation and extreme concentration on the dancing, and I felt anxious and disconnected as I lost contact with the things I loved to do and people I loved to be around outside of dance. I was often concerned about paperwork deadlines; such clerical matters were not

concerning to him. The partnership grew toxic after a year and half of this cycle, and we stopped working together at his request. He said the differences in approach and personality were just too much to handle, and that he didn't want to work with a person with anxiety anymore. I was absolutely crushed, as dance had helped me overcome so much of my anxiety, and I had worked so hard on personal healing and growth to move past it. I feared no one would want to dance with me anymore after that experience.

This was perhaps the darkest period of time in my dance journey, but fortunately, I still refused to give up my dream. I knew my sophomore year of college that dance was truly my passion, and even contemplated leaving school to pursue it full time. While I am glad I did not, the realization of that passion has stuck with me ever since. The dream was and is to become a professional dancer and champion, and I would soon find my way back to my path to that dream. I began working with my current coach, who was more than happy to take me on. My anxiety seemed to disappear in the face of his positivity and extremely different approach from my former coach, and we were soon dancing higher level choreography than I had ever been given before. My dancing grew in leaps and bounds and slowly the reasons why I began dancing in the first place began to creep back in. Joy, laughing, having fun, being social, learning to be ok with failure. Using a loss as a win to learn how you need to grow.

It was shortly after I began this new leg of my journey that I was struck with the idea for this project. I realized that even through the massive up and downs that my dance journey had brought, I still stuck with it. I still loved it even in the hardest moments. I even declared a minor in health and human performance shortly after I began working on my thesis, when I realized just how important dance and the wellness it provides is to me

and to others. Dance had entered every part of my life, and the only place it was missing was my formal education. I am thrilled to have made that choice, as my classes further my knowledge and give me the power to improve myself and be of assistance to others.

Dance gave me the ability to pull myself up over and over again when in the past I would've just crumbled into myself. I realized through the process of creating this project that dance has given me a way to express my emotions. Coming from a background of social anxiety and depression, I kept all my emotions bottled up inside me all the time. Dance has allowed me to express every single one of my emotions, and to in turn connect with others through that shared experience. I have had people tell me that they believe the story I am telling when I dance, be it the passion of the tango or love of the rumba, they invest in the story I am telling. I believe this is because dance is a cathartic experience for me, that allows me to put whatever is on the inside on the outside through my dancing, and at the end of it all be able to walk off the floor with a sense of relief from the emotional burden of whatever I am feeling.

Dancing is the channel through which I can feel but not succumb to my emotions. When my grandfather passed away in April, I got the call while at a dance competition, mere hours before we were meant to compete. My family wanted me to stay and compete rather than fly home, knowing how hard I had worked to get there, and knowing that I was in the best place possible to have found out. They know that not only the dancing itself, but the people with whom I dance and travel, are quite often my support system for most everything in my life. We danced that night and every single emotion coursing through me was channeled through my body, and I could feel the room feeling them with me too. Dancers have a way of communicating and supporting each other where no

words are necessary. It made me realize that dance is something truly special. Dance has brought some of the most wonderful people and experiences into my life and has helped me to overcome so much.

There is a concept known as the Wellness Balloon Theory (Appendix B) that I learned about in one of my classes for my minor, Somatic Movement. The theory divides a person's energies into five balloons: Physical, Mental, Emotional, Social, and Spiritual. Physically, obesity, joint pain, and muscle injuries were dramatically improved by my decision to start dancing. Mentally, anxiety, social anxiety, panic attacks, and depression were all dramatically improved or removed altogether by my decision to start dancing. Emotionally, dance has improved my self-esteem, given me more confidence, and increased my positivity. Socially, I am more friendly and extroverted, have many more friends, and find it easier to speak publicly and with strangers. Spiritually, dance gives me a purpose in life and allows me to set meaningful goals for myself. There are very few things in this world that I have found that have the power to elevate every facet of a person's life in the way that dance has for me.

There is a quality about it that I feel cannot be captured by many seemingly similar activities. It seemed that every other dancer I spoke to in casual conversation also had some kind of story with dance. No one just thought it seemed mildly interesting and so now does it from time to time. No, everyone had a story, a journey. Some are similar to the one you have just read above, and some are different but equally transformative. That is what inspired me to go out and interview people from all over the country to find out what the magic really is behind the effect dance seems to have on people.

Journal of My Journey to Orlando

While the title of this thesis, “A Journey Through Dance,” is in many ways metaphorical, it was also literal in the sense that I travelled to Orlando to compete and interview people at one of the largest ballroom dance competitions in the country. I chose Millennium Dancesport¹ in Orlando as the competition for my thesis because of its size, yielding not only a much larger and more diverse pool of people with whom to interview with, but also the chance to really evaluate where my journey has taken me so far in my personal dance career. Preparing for this trip involved months of preparation and fundraising in order to make it happen.

In total, the trip ended up costing the roughly \$5100 that was raised to support it. \$2750 of that amount was received in scholarships via the MTSU Honors College and the Anne Holland Fund, associated with the MTSU Health and Human Performance department. The rest of it was raised via GoFundMe² over the course of four months, from friends, family, and strangers alike. My Media Management degree certainly came in handy during this process, as I utilized strategic social media marketing to spread the message of what I was doing over multiple platforms. The original goal was to raise around \$8000, but we were able to cut things deemed not completely vital to the trip, and function under the budget we had. Many do not realize the extreme cost of dance as a sport, as plane, hotel, entry fees, coach fees, costuming expenses, and more quickly pile up, which is the reason I had never attended an event of this size before.

This project gave me the unique experience of interacting with more dancers than I had ever seen in one place before in the entirety of my dance career. The project and trip were full of surprises, before we even got on the plane. One of the biggest surprises

to come out of getting ready for the trip was the project being picked up by news outlets. In my fundraising efforts, I reached out to the campus rec center to see if they would sponsor the trip. They unfortunately could not but found my story so moving and intriguing that they passed it along to campus media. MTSU campus media wrote a news story on my dancing, journey to get to Orlando, and my thesis, which was then picked up by two local newspapers³. The story went on to be picked up by Fox News Nashville and Fox News Birmingham, and suddenly my thesis had gone from a small passion project to a story that was crossing media outlets and state lines. I started receiving messages from people all over the country and the world telling me how interesting they thought this project was and how much they believed in it. Some even asked how they too could get started dancing!

I was amazed by the outpouring of people who both knew me and did not, who wanted to be involved in this project after seeing the truly remarkable impact dance has in people's lives. It was at this point that I realized my thesis had gone beyond what the proposal laid it out to be. Yes, I still was interviewing people locally and preparing to go interview in Orlando, I was reading the academic articles on the benefits of dance, but it became something more than that. Being able to share my story in such a public forum, and interact with the people who got hear it, became as much a part of this thesis journey as the piece you are reading now. The idea that people were legitimately inspired by this project, by me, was mind boggling. I had always hoped that someday I could inspire others to believe in themselves like I struggled to do for so long, and suddenly it felt like I was doing that. With this thought close to my heart, fundraising complete, and

excitement for the project mounting, all that was left to do was to keep training, make the proper travel preparations, and get ready for our journey.

The best laid plans often go awry, and, as luck would have it, three days before our scheduled departure I popped a rib head out of place in my back and was left in agonizing pain. As an athlete you always hope these things will not happen but have to be ready for it regardless. Two different chiropractors and a lot of stretching and sheer will later, I boarded the plane to Orlando desperately hoping I would feel well enough to perform the next day. But as luck would have it once again, upon landing (still wrapped in kinesiology tape) I learned a scheduling error had occurred, meaning I would be doing my first performance of the week that night, a mere seven hours after landing. The point of mentioning all of this is to say that one of the most important things I learned from this journey on a personal level was never to expect anything, and always be prepared to face down potential challenges. Adversity comes to us every day in all areas of life. It is a dance lesson and a life lesson in one; you can prepare for something for six months and within 48 hours everything can change. You just have to learn to adapt and overcome a stressful situation and decide if you will break under the pressure or overcome the adversity in whatever way you can.

In the past, all of these things thrown at me at once would have completely overwhelmed me and resulted in me giving up or collapsing into a meltdown anxiety attack before even attempting to dance. This trip, with all its imperfections, actually helped show me how much I have grown as a dancer and as a person since I first started. This idea of growth, I found as talked to more and more dancers, is not isolated to my experience. Many said that dance gave them the courage and strength to overcome some

of the most difficult challenges in their lives, and to do things they never thought they were capable of in the past. My journey to Orlando was truly a week of doing things I would never have dreamt of doing in the past.

We danced our solo piece that night in a 50,000 square foot ballroom, in front of hundreds of spectators and judges alike. In that moment standing there on that massive floor, just my partner and I waiting for the music, I saw the girl three years ago who could not even speak to strangers without a complete breakdown. That girl was now covered in rhinestones and feathers and striving to hold the entire room's attention. Once again, I was struck at how much power dance could give an individual to overcome their demons. Despite having an absolute blast, and receiving many kind words about the piece, we placed last with a mere 1.7 points separating us from first place. In the past, this kind of thing would have completely destroyed my confidence and left me performing terribly for the next two days to come, as my fear of failure combined with a desperation for perfection would have undone me. I was surprised however, at how much I had grown, when I brushed it off, said we had a good time, went to bed, and woke up to perform the next day. One day in and this journey to Orlando was already revealing that I had become a stronger dancer and person than I thought I ever could be.

The next two days were a whirlwind of dancing and competing on a floor larger than anything I even thought possible, against so many people we could fill the entire dance floor. We danced in categories that were specifically my age level and difficulty level, as well as combined categories that allowed in a much broader range of ages and all levels of skill. To provide some terminology, to dance "Closed" means you must follow a syllabus of specific moves within your routines, while "Open" means you may

dance whatever figures you like with few rules in place. Difficulty levels ranging from Bronze to Gold also accompany one of these designations to indicate skill level, though when you compete in an event designated as only “Open” it means any skill level doing almost unrestricted choreography is in the category.

In the events specifically for my age group, 19-35, and at my difficulty level, Full Open Silver, we won all of our single dances, which was a huge achievement. Earlier this year, I danced at merely Closed Full Bronze, seemingly worlds apart from the difficult routines and patterns I found myself dancing in Orlando. I had just moved into the Silver and Open designations in March, which was a huge leap of faith, and even more so to attempt to dance those categories at a competition of this scale so soon. As a person who has always had a terrible fear of failure, and a desire to always be successful, entering these divisions where I knew I was definitely one of the least experienced and in no way guaranteed a win, again was proof to myself how far I have come through dance. Our multi dance events all fell to the described category above of plain Open, meaning we ended up being the only Silver level couple competing against people who were dancing Open Gold single events (the highest level possible) and been doing so for many more years than I have.

In interviewing a fellow dancer before going into these events, we discovered we would be dancing against each other. She asked at what level I danced, and for how long I had been dancing in total, at that level, and with my current partner. At the conclusion of it all she said something to the effect of “Wow, that is pretty crazy. That is really fast growth and shows a lot of drive to do that.” So, when we placed last in 2 of the events and 10 out of 12 in the third, I really wasn’t that upset. Of course, when you spend

months training you want to win everything, but you cannot always shoot to first place right away or expect amazing results always. I knew going in that I was the underdog of the group, but I still had a blast performing and received many compliments from people who got to see us dance. Having already learned so much about myself and my growth as a dancer from my first few days competing in Orlando, I would spend the rest of my trip interviewing other dancers and learning how dance impacted their lives in ways both similar and different to my own.

One of the most moving experiences of the entire trip, the moment at which I knew that this was the perfect competition for me to have attended came on the last night I was in Orlando. Earlier that day I had been introduced to a professional dancer who works primarily with children and young adults at their studio, including many with disabilities both mental and physical. The instructor told me that they choreographed group routines that were all-inclusive and that they had been bringing routines to this competition for years. In the evening I went to watch the many professional events and featured group performances, as it was the one night I did not have to perform. It was during this evening event that the competition organizers did a special presentation on a charity they were helping to sponsor through this event, Give Kids the World Village.⁴ It is a resort in Florida that pays for children with critical illness to have weeklong vacations with their families. After the conclusion of the presentation they went on to what they announced as a special group routine, and as fate would have it, was the children's group that featured many dancers with disabilities. As they walked onto the floor the announcer mentioned that at least two of the dancers had been to the Give Kids the World Village before in the past few years. Here these kids were, many of them not

yet double digits, overcoming challenges many could never imagine, and they were dancing their hearts out. You would never guess that the beaming, smiling faces on the floor were critically ill or disabled. Having spoken with the instructor previously I knew that some of the kids were nonverbal, but through their dancing they had a voice. It was truly the epitome of what this project strives to prove, that dance is transformative, it allows people to overcome physical and mental obstacles, and it changes peoples lives.

Interviews and Academia:

What do the People and Science Have to Say?

Summary of Interviews

In total, I interviewed just over a dozen people, both male and female, from half a dozen different states and two countries. Locations of origin include Tennessee, Florida, Mississippi, Illinois, New York, Minnesota, and Indonesia. This geographic spread was by design, to prove that dance and its transformative effects are not restricted to any particular area. Interviewee ages range from 23 all the way to 71 and they come from all varieties of occupational backgrounds and dance styles, including my discipline of ballroom, but also ballet, contemporary, hip hop, tap, and jazz. I interviewed not only people who now make their living in the world of dance, as either studio owners, costume designers, or dancers, but also people who work in unrelated fields as teachers, politicians, artists, and students. These demographics were gathered to prove that dance and its effects are not isolated a gender, an age, or a location, nor are they limited by style of dance. Dance has the power to touch and change anyone's life regardless of what circumstances they are coming from, which is exactly what I hoped to prove when I first began working on this project.

Later portions of this section delve into specific issues mentioned by interview participants that science has correlated to dance, but a broad look across all of them showed commonalities regardless of their specific story. Participants were asked a series of eight predetermined questions approved by the IRB, and then the conversation flowed from there. Conversations ranged anywhere from 15 minutes to as long as 45 minutes. Many found the process of sharing their story with me as cathartic and exciting, and I

found the same, being able to share my story in interviews and in the earlier parts of this thesis. The eight questions participants were asked are:

1. What is your age and occupation, and where are you from?
2. What style(s) of dance do you do?
3. How long have you been dancing?
4. How and why did you get started dancing?
5. What does dance mean to you personally?
6. Could you describe your journey with dance in a sentence? How has it impacted your life?
7. In what ways has dance improved your health and well-being?
8. Why do you continue to dance? Do you think dance has a special quality that cannot be found in other physical activities or artistic disciplines?

Selected quotes from the interviews are to follow, but there were a number of broad observations and commonalities among all the answers given. Many expressed that dance had become part of their identity, and that they could not imagine their life without it. Everyone was able to provide an answer to the question how has dance improved your health and well-being. No one had an experience in which dancing did not improve and transform their life and health in either a physical, mental, emotional, social, or spiritual way. In answer to whether or not dance has a special quality, everyone said yes. Many said they believed dance was special because it was a combination of art and sport, and that not many things out there allow you to be mindful and artistic while also exerting yourself physically. The all-encompassing nature of dance, its ability to truly impact

every facet of a person's life, was what many found unique and cited as a reason as to why they continue to dance. With only one or two exceptions, most people said that much like me, they never thought they could, would, or should dance. They were surprised at how much their ability has grown, but also at how much they have grown as a person through dance.

This project focused in on interviews, because while science backs up what I already believed to be true about dance, I wanted to hear if other people with firsthand experience would say the same thing. It gave me the unique perspective of being able to put human lives and stories to an academic assertion on paper. The following quotes have been transcribed from these interviews to give the readers of this project the same experience I had. Do not simply take my word for it that dance is transformative, or even science's. Read it directly from the dancer's mouths.

Selection of Quotes from Interviewees

- “Dance was escape, (it) took me away from problems at home and social stressors at school. I was a quiet artsy person and I wasn’t in a school that was inclined to do much art, so it gave me that.”
- “It was very much a lifesaver in that it kept me off the streets, and from hanging out with the wrong people without much parental support at home, and it made me feel like I was a part of something.”
- “When the music turned on, I felt like a different person. I got to escape a little bit.”
- “It turned into my lifestyle, it helped me find my best of friends. It was even a deeper social connection as well as being a part of something. It helped me to socialize with people without words.”
- “Dancers in general are some of the most well-rounded individuals. We know how to lead, we know how follow, and we know how to be part of a team. We can take on all those social and professional roles and we know when to.”
- “What I realized in dance is that without the music, I am still aware of my dystonia. But when the music hits I don’t think about it. I don’t notice it. I don’t give it the time of day. It is truly an escape from my condition that nothing else

can do and I've tried. I've tried a variety of movement modalities and I have found it is dance only that takes my condition out of my head and body. Nothing else has been able to do that."

- "There's definitely a connection between music, beat, timing, rhythm, and moving that just balances the body, synchronizes the body, distracts the mind. There's definitely something in the sensory motor part of the brain when you're sensing, feeling, and moving, a trigger, and that's worth looking into and studying"
- "Dance has been important enough to me socially and emotionally that it's worth it to make some sacrifices in the way that I prepare or present myself in dance, so that I can keep dancing."
- "Dance has this element of always throwing something new at me. I don't just follow, I also lead...I am always learning something new, and I am able to do things in dance through that (leading) that personally I can't follow. Even though I have a lot of physical limitations I have been lucky to work with a lot of studios who have been permissive in me leading. It's really gratifying, it's fun, it gives me this sense of being wanted because people want to dance with me now that I can do a lot of things I couldn't do."

- “Dancing fills a social and physical need for me...I spend a lot of time alone; I work in a solitary profession. It gives me a physical and personal contact I don’t necessarily get all the time. I’m grateful I have gotten that through dance.”
- “I’m not a graceful person. The first time my brother saw me do a cha-cha he said ‘how is it that you can trip over your own feet walking across the clean floor, but you can do the cha-cha? How is that a thing?’ and I don’t really know, I think that maybe it’s the same reason that people who stutter don’t stutter when they sing. I think there’s something to do with the rhythm and the music that just connects with my body in a way that makes everything work more smoothly.”
- “Dance offers me the opportunity to learn something new without the high stakes. I’m a teacher, educator, researcher, and most of the time when I’m learning something new it’s got high stakes. Dance is a way to explore a new field without those high stakes and just brings it back to fun. My motto has always been don’t let a year go by without learning something new, and ballroom has continuously been something new, new stuff with new people, and that is dance’s value to me”
- “I had a bunch of stuff happen all at once. I had a health scare and was sitting in my apartment and thought I want to go out somewhere where there’s drinks and dancing, I haven’t done that since college...I had a good time, so I just kept going back. A couple started coming in and doing ballroom. I was still thinking ‘I am the most uncoordinated person’ so I’m just going to sit here and watch them, because I could never do that... They both said, ‘Yes you could!’ So, I went home

and learned some basic steps in front of my computer. I learned enough that way to socially dance...The man in that couple was diagnosed with pancreatic cancer and the woman became like a sister to me. I was there if they needed me, I helped with their dog... He died and she packed up everything and moved to Colorado. I stopped going to the same place because it hurt too much to go back there. But friends kept saying you know you shouldn't stop dancing. I went to a studio where I thought there wouldn't be memories, I was barely functioning, but the instructors were wonderful. I could barely make it through an hour without crying, but I kept coming back. I started to realize you can really get caught up in it, at least when you're on the dance floor, focusing on dancing, you're not thinking about any of the rest of it. Even if it doesn't fix some of the other things, during the time you're doing it, you're happy."

- "The last few years I lost the both of them, and a couple of other friends I neglected while I was dealing with everything. Then my aunt and my father died last year, as well as my cat. To have dancing, this was the one thing where I could go to the studio, put on my dance shoes, and it becomes a parallel universe. The dance shoes are magic, the other stuff is still over there but you're over here dancing."
- "After a few months I never thought I could dance the way I was dancing now. I wanted to keep going and see what would happen next. It gives you something really positive to focus on"

- “I may be stronger than I’ve ever been, certainly than I ever was in my teens and twenties. Its basic strength, but I can do things I couldn’t do five years ago. Most adults don’t use muscles in the ways they used to when they were ten years old.”
- “I don’t know that there is anything else that combines the physical, and the emotional, and the social, in this kind of way, that has a freedom to do it by yourself, in a group, in a lesson. You can do as much or as little as you like. You can get lost in it and have fun. I can’t think of anything that covers all of it. Art, you’re only expressing yourself through what you put on the paper, but you’re not using your body. But dance uses all of you and that’s why it’s so helpful in so many ways. It’s using your mind and body altogether. To discover in your fifties, when you don’t think there’s that many possibilities left, that you can do these physical things that you didn’t think even at 21 you were capable of, that you have the strength and coordination to do these things, it’s great.”
- “My husband and I learned to dance for a cruise- It was targeted towards old people and in my mother’s day they were all taught how to dance. So, we thought we need to learn to dance, so we got three lessons for \$100 and went on the cruise...By the end of the cruise we knew three dances and I placed second in a dance competition at sea. We really liked dancing. I never expected it to go further than that because at that point I was about five years out from having a brain tumor removed. Girls were moving backwards on the floor, and I thought, I will never be able to walk backwards. I was having trouble with migraines and

vertigo, and so it was really difficult. But I loved foxtrot music and I wanted to learn that dance. For the first six months we would just get going and I would have to go to the bathroom and be sick, my brain was still not working right, but I didn't want to quit. I just kept at it, I kept going. The more I did the better I got. When I went back to my neurologist for tests after 2 years of dancing, he said 'Wait, this always used to make you sick and you're not sick- What have you been doing?' I've been dancing. I saw the neurologist for the last time this year"

- "It reduces stress, I can leave my stress on the dance floor. I can also stand up and walk and not get dizzy. I know it's because I've spent hours and hours on a dance floor. I'm not fearful. When I walked around the floor the first time, I was terrified, shaking in my shoes, afraid I would fall. I didn't, and it got better."
- "I get the creative side of me (from dance). Not many people know I used to teach music; my degree is in music. But over the years with my tumor I have had hearing loss and now I can't be a choir director anymore, because I cannot hear well enough. But I can still be creative. There have been times (dancing) when I could not hear the music at all, but I can still dance to it because I don't have to hear it. Someone else heard it and I can follow. I get to be creative again like I was before. I don't get to do it anywhere else."
- "Dance is big and bold and fun and passionate and sad and beautiful all rolled into one. What I love about dance, is that it really is for everybody. For 25 years my

husband told me he didn't bend at the knees and he refused to learn to dance until I made him... When I couldn't dance for a few months after a lung infection he would ditch me on Saturday nights and go dancing without me! I thought, this is the man for 25 years who told me he could not dance. Now he's doing this. It's also for people who are larger than life and remarkably good. It's for everybody in between, all of us. There's a spot for you on a dance floor. You don't have to be good at it to have fun, it just is fun."

- "You get to meet people you would never normally get to meet. When I walk through that door, my politics don't matter, my religion doesn't matter, some of my best friends on the dance floor are on opposite ends of the spectrum from me off the dance floor, but they are some of my favorite people. I hang around a very diverse group of people now where I never did before, and I love it."
- "You should just dance. Just do it."
- "I was drowning in obligations and regular life and needed something to do for me. My office manager was taking ballroom lessons and would not shut up about how much fun she was having, so finally I went in as her guest. It didn't take too long before I was completely hooked."
- "It (dance) is communication. It is living, it is breathing. I think it is my first language...As weird as it might sound, I really don't think English is my first

language, I think it's movement. The emotions and the energies that you exchange with your partner, and with the audience, it's not describable."

- "It is physical and artistic at the same time. Sports are athletic and physical, and other arts can be emotional and artistic, but dance for me combines the two of them. There's something about the physical movement mixed with the emotions that really makes you connect with people. I have (dance) students that have grown up and graduated and gotten married and I am still connected to them. I don't quite know what that magic is, but magic is a great word for it."
- "When I went to my first ballroom competition, there was a 97-year-old woman on the floor and I thought 'Oh heck yeah, you go' and realized 'You are not old here'. I was in the middle and that was phenomenal. Since then I feel like a much more complete human being. I feel like I tapped into places that had been put to rest that didn't need to be put to rest. Physically I am in better shape than I don't know since when."
- "I've been asked so many times over the years, can everybody dance? Everybody can get better than they are right now. Go for it. You're not going to be fantastic right away. Who cares? Go for it, have fun, you can be better than you were yesterday, so keep working at it, and tomorrow you will be better than you were today. If you want to do it give it a shot."

- “The passion just got in me. I remember when I was leaving the house, I told my husband this too shall pass...” (It didn’t)
- “It has made me the healthiest that I’ve ever been, I lost 20 pounds. It gives me such a different outlook and a positive attitude. It has made my artwork so much bigger and better. It has just opened up so many venues for me. In my everyday life it is really the positive attitude, it’s made me better than I have ever been.”
- “It seems to cover all of them (in reference to the five types of energy). You can’t get on the dance floor and have a negative attitude. You think about mindfulness, and you get on the dance floor and you can’t worry about what you’re about to do or what just happened, you are mindful when you dance. You’re in the moment, and you feel it.”
- “If you compare dancing to golf, golf is the same swing. In dance you are doing something in every single step, something different. You have to be right on it. The music just gets in your soul. It brings together everything, it brings together social, health, physical, spiritual, I think dance brings it altogether, whereas golf doesn’t.”
- “Just get out and do it. Too many people say ‘I wish I were you I wish I were doing that’ just get out and freaking do it. Just give it a try. The biggest obstacle

of getting (dance) students in is fear, that's the number one obstacle in dance. Just do it...I wish more people would give it a try."

- "I'll dance until I'm 80, because it keeps me healthy. I don't have knee replacements, hip replacements, I have no issues whatsoever. I credit it all to dance."
- "I probably would not have been born if not for ballroom dancing. (Parents are dancers) It means everything, it's my livelihood. I pay my bills, I have my social connections, it's how I met my (ex) husband, it's just a big part of my life. It's a wonderful world."
- "When I first started in the studio, I went through a really bad break up. My mom said, 'Go to the studio, go have a lesson, and once you start dancing whatever is going on in the outside world disappears for that hour or two' and then when you have go back to it, those endorphins are in there and feel good."
- "They (new dancers) might have been the ugly duckling growing up or may not have had many friends, but in the studio, you instantly have friends and family that support you."
- "It is a nice combination of artistry and sport; I don't work up a sweat painting or taking pictures. It's so healthy for your body and mind, your blood, your skin."

- “Every person started not knowing anything. Any person can be a world champion...Anyone can make it to the top if they have the right guidance and the want and need to do it.”
- “People say why did you stay with it or what did you do? When I started dancing, physically, I had bad knees my entire life, my kneecaps would pop out when I was a kid. Every few weeks I would be at a hospital or an orthopedist... When I first started, I was terrified. My teachers had to work through the tiny details with me, that most people have no problem with... I have no problem turning now like I used to, but some things I still hold back from. But once I learn them, I’m fine. It’s been like this since the beginning. I was terrified of so many things, and would push things away, but once I got it, I was okay.”
- “When I first started, I had just gotten out of a bad relationship, I had gained a lot of weight, and I was super young. My life kind of sucked, personally, in general, I had to run away from my home life situation. I was trying to get out of my whole world, and dancing kind of became a safe spot, a safe haven. The dance studio was socially a great place for me to go, because I didn’t have to worry about anything else.”
- “I started dancing after a divorce to find friends and activities to fight boredom. Through dancing I lost over 80 pounds and improved my physical stamina and

health. I credit dance to saving me from depression and suicide. I found happiness in dancing, which I never thought would happen.”

- “I lost the ability to dance 8 years ago after having seven strokes and a brain injury with seizures. However, I still enjoy seeing dance competition. I am inspired seeing the joy of dancers. I loved basketball and alpine skiing, but nothing compared to the joy of dancing.”
- “Dance was a release for burden, at first. But it changed day by day. I found it becoming something of a journey, with life experiences. It’s my life, my journey, my pursuit. The creativity from transition, it is the beauty of dance.”
- “Dance saves my life. I had psychosis in 2016 and through dance I have discovered the crisis of my psychosis. Physically, it makes me fitter. Psychologically, there’s realizations every time I dance. I move to a space, and next, I know something about myself.”
- “After my parents started dancing, I began taking lessons at the same studio near where I live. I immediately fell in love with the sport and art of dance, and the rest is history. I have been an athlete for all of my life, so after I retired from competitive sport in 2013, I found dance a couple of years later. I have been ballroom dancing for three years, but I started wheelchair ballroom dancing (Para DanceSport) since last December after being hospitalized and later diagnosed with Fibromyalgia.”

- “Dance means so much to me, personally. My dance studio is a second family to me, and there are many people that I can depend on who encourage me throughout all aspects of my life. Dance gave me a particular purpose in my life after my hospitalization, and I am thankful for my dance instructor and partner who was fearless in learning wheelchair dancing.”
- “My dance journey has been an exhilarating ride full of happiness, joy, and excitement that will never stop. When I found my love for dance, my life changed. It gave me a new hobby and a new way to compete in a new sport. Dance has given me a lot of new friends as well who I socialize with outside of the studio.”
- “Dance has improved my mental health significantly. Whenever I dance, it increases my mood and lifts my spirit. I can always count on dance to feel better. It has also kept my physical health in fit as I was recovering from my hospital stay as it was something to keep me active.”

*The following is a poem written by the quoted dancer above, who now dances in a wheelchair. It has been included with their permission with a request to remain

anonymous *

Free Falling

I am free falling

The grace and effortless going across the floor

It lifts up my spirit

All of my pain, weakness, and fatigue goes to the backseat

All of the anxiety and uncertainty is forgotten for that bit of time

I am free falling

The wheels are my legs

They are moving where my body and leader tells me to go

I just have to follow

I am free falling

As I go across the floor, I feel like an angel dancing through the clouds of Heaven

Beautiful little movements I can move the direction of my wheels

It is the most beautiful thing

It is the most graceful thing

It is the most effortless thing

It is wheelchair dancing

Ballroom dancing

I am free falling

Into the clouds of Heaven with angel's wings with wheels to guide me

Science and Academia: Intro

Several of the participants quoted previously indicated that they believed there was something scientific about what dance does in people's life. A few even mentioned that they felt there must be something to the way it interacts with the brain, nerves, and muscles, that allows it to transform people in the ways that have been discussed throughout this project. Looking at my interviewee population as a whole, some struggled with physical issues, such as tumors, strokes, Fibromyalgia, Multiple Sclerosis, arthritis, vertigo, Dystonia (with a family history of Parkinson's), and obesity and general health. Others struggled with mental issues, like Psychosis, depression, suicidal thoughts, anxiety, isolation and loneliness, loss of a loved one, and divorce. Though I was unable to speak with anyone with Alzheimer's or Dementia, these are also common mental and somewhat physical illnesses being more and more commonly treated with dance therapy.

Many people have seen the video currently circulating social media, of a man who struggles to walk with Parkinson's disease. As soon as someone turns on music, however, he is suddenly able to tango. While the video has been seen all over the world, oftentimes people do not understand the full implications of the research behind the three-minute-long viral sensation. The scientist leading the research in the video, Meg Morris from the Human Movement Lab, says that "The music provides external rhythm, to compensate for the defective rhythm inside the brain."⁵ Morris and others like her are pioneering dance therapy research all over the world, giving a scientific backing to a feeling many dancers intrinsically experience. Whether mental or physical, dance is taking the scientific world by storm with the effects it can have on disease, trauma, disability, and illness.

**Mental: Mood
Depression, Anxiety, Psychosis, Etc.**

The first question people often ask me when they hear my story is in reference to the physical changes I underwent. However, what they do not realize was that the most dramatic effect occurred in regard to my mental health, specifically anxiety, social anxiety, and depression. Several other people I spoke to also said that dance had helped them recover from depression, psychosis, social anxiety, and general feelings of isolation or loneliness. One interviewee even said they continued to dance despite having severe arthritis in over 80% of the joints in their body, because dance was so important to their mental and social health. With this theme being so common in dancers, it is only natural to wonder why this is the case?

According to Dr. Judith Wurtman, who writes for *Psychology Today* magazine, the use of DMT, or Dance and Movement Therapy, is extremely common in the case of mood disorders such as depression or anxiety. She even goes so far as to say that some mood disorders have DMT as the only recommended treatment.⁶ She cites a study in which Finnish researchers took a group of people actively taking antidepressants, and divided them into a control group that continued to receive medication and switched the other group over to DMT. After twelve weeks, the DMT group showed significantly more improvement than the group receiving only medication. Researchers believe that there are a number of reasons this may be. Dance is cognitive and focusing on physical movements and music takes the mind away from painful thoughts. It also provides a sense of learning and achievement as people develop a new skill, and allows for social interaction.

Similar results were found on the impact of DMT on the issue of anxiety as well. A research study called “Effects of Dance on Anxiety”⁷ from the *American Journal of Dance Therapy* found that dance was the only activity of a number of control activities that “significantly reduced anxiety.” Control activities included a physical education group for the effects of exercise, a music group to control for aesthetic sensitivity, and a mathematics group for logic and processing. Of all of the activities listed, only dance had a significant effect, and without any concomitant variables i.e. external variables playing any role in it. Age, sex, attitude towards dance, and previous experience in sport, dance, and relaxation were all gathered from participants at the start of the study and were analyzed, and there was nothing obvious that would make these people more prone to respond to dance over any other type of activity. This study is scientific proof of what I stated in summation of my interviews, and of what I have been aiming to prove with the project all along, that dance impacts people regardless of their background or circumstances going into it.

While these are only two articles, there exist many more on the topic of dance therapy and it’s impacts on mental health, with the specific focus of mood disorders. Dancing forces the mind to use cognitive skills and focus away from the internal dialogue of these disorders, while also providing a sense of accomplishment, community, and peace to people who suffer from them. While dance’s notable impact in these areas is obviously being seriously looked into, perhaps more well known to even the masses unfamiliar with dance is its effect on mental disorders of memory and function, like Alzheimer’s and Dementia.

Mental: Memory
Alzheimer's and Dementia

Although I was unable to interview a dancer with Alzheimer's or Dementia, it is undoubtedly one of the fastest growing areas in dance therapy research and the most well known by the general public. A number of studies, charities, and research organizations have sprung up in recent years regarding the use of dance as a tool to help slow or reverse the effects of these neurological memory affecting diseases.

While there are a number of scientific studies I will touch on later in this section, the entirety of this project has been attuned to how dance and the qualities it possesses, which have been further explored by science, actually affect the lives of real people. This project strives to put a name, a face, or a story to a condition. For that reason, it is important to look at the organizations that have been created with the purpose of helping individuals with their struggles, in this case specifically memory disorders, through dance. RX Ballroom Dance is a nonprofit organization that stands for "A natural prescription to healthier mind and body" and focuses on helping people confronting neurodegenerative conditions.⁸ They charge no money to participants in order to allow people confronting these conditions to receive what they and many others perceive as the most effective type of care. Their participants include sufferers of Alzheimer's, Dementia, Parkinson's (included in the physical part of this project due to its more pronounced physical effects caused by neurological breakdown), and other cerebral diseases. They put student highlights on their website, one of which is Alan, an Alzheimer's sufferer:

“Alan has been diagnosed with severe Alzheimer’s and struggles to remember basic information. Additionally, the disease has robbed him of his normal speech patterns so regular social conversations can seem frustrating and hard to carry on. The first day I met him, he was embarrassed about his perceived disabilities. But Alan loves to dance. He just lost his confidence to be in regular social situations. Ballroom dance accesses new neural pathways to build new motor function skills. Alan couldn’t remember my name, but he remembered the merengue without needing any review. He couldn’t remember his birthday, but he waltzed for over 5 minutes without ever once missing a step. He sang along to the music. He experienced joy. This class was not about his disability. It was about enhancing the quality of his life.

Six weeks later and Alan has seen improvement in balance, coordination and his overall ability to remember directions. It did not happen in a day, but consistent practice and showing up every week has made a huge difference.”

T.A.P, which stands for The Alzheimer’s Project, is another similar nonprofit organization that also focuses on transforming the lives of Alzheimer’s and Dementia sufferers through the use of ballroom dance. It is a class that is now offered nationwide and in many assisted living homes and was approved by the National Dance Council of America in 2013.⁹ The organization says of itself, “It is our hope and goal to enhance and enrich the lives of those, who are living in a world of darkness – to create an environment, that allows one to express, imagine and feel, to provide a “safe” social environment for family members, caregivers, community and professionals. The mind-

body connection will demonstrate, that the art of movement – specifically dance – enhances ones cognitive abilities. The Alzheimer’s Project will offer classes to people of Normal Aging and to those, who are suffering with this insidious disease, regardless of the stage they are in.” This organization, headed by a behavioral neurologist Dr. Alan Jacobs, also sees dance as a prescription for these diseases. The reason for that is that much like DMT with depression and anxiety, research has shown that in this field too, dance is the most effective therapy for these diseases.

According to a study called “Leisure Activities and the Risk of Dementia in the Elderly” carried out by the Albert Einstein College of Medicine and published in the *New England Journal of Medicine*, dance was found to be the most effective activity for improvement of neurological degenerative disorders. Groups of participants were assigned to various activities, either physical, including golf, biking, and swimming, or cognitive, including reading, writing, and doing crossword puzzles. Dancing regularly provided 76% risk reduction for dementia, far exceeding any other activity, cognitive or physical. Researchers commented on the results, “For centuries, dance manuals and other writings have lauded the health benefits of dancing, usually as physical exercise. More recently we’ve seen research on further health benefits of dancing, such as stress reduction and increased serotonin level, with its sense of well-being.”¹⁰ Another study carried out by University of Hradec Kralove in the Czech Republic called “Dancing as an Intervention Tool for People with Dementia: A Mini-Review Dancing and Dementia” found similar results. Not only did the results of this study confirm “positive efficacy of dancing therapy on cognitive, physical, emotional and social performance of people with

dementia,” but it also concluded that more clinical trials should be conducted in this field.¹¹

It is apparent that dancing effects both the body and the mind, and for this reason has proven extremely effective in a number of medical uses involving the brain. Dance also, I found through my interviews, proves an effective way of emotional recovery.

Mental: Trauma
Death, Divorce, Traumatic Events

If you go to most any dance studio in the country, especially one oriented towards social dance, you will undoubtedly come across more than one person who began dancing after a divorce. It seems logical to seek social activity after an emotionally traumatic event that has left a person with a lot of free alone time. Similarly, people who have lost a loved one, often a spouse but sometimes friends or family, also often end up in a dance studio. From both my interviews for this project and my personal experience in the dance community, I find these to be some of the most common drivers as to why people end up dancing and continue to dance as an emotional healing process.

One study called “Creative Arts: Therapy as Treatment for Child Trauma: An Overview” published in the journal *The Arts in Psychotherapy* collected 38 articles that have been published in the last 20 years that cite using creative arts to help emotional healing in traumatized children, three of which were dance specific. Creative arts therapy is a broad term that includes the fields of art therapy, music therapy, dance therapy, drama therapy, poetry therapy, and psychodrama. The article cites an increase in use of these practices with children suffering from PTSD for these reasons: “With the increasing multicultural diversity of groups with which psychologists and counselors worldwide are required to work, creative arts therapies become more important, as they provide means to deal with language barriers and encourage the use of historical cultural practices such as music, dancing and arts. They also allow for group and community involvement.”¹²

One of the three dance specific studies mentioned above is entitled “Pathways to embodied empathy and reconciliation after atrocity: Former boy soldiers in a

dance/movement therapy group in Sierra Leone” which provided dance movement therapy activities for adolescent orphan boys who had been involved in wartime atrocities as children. The research overview said of the study, “This fusion of Western trauma treatment and ritual proved transformative in helping the youths overcome violent impulses and rediscover the pleasure of collective endeavor. Engaging in symbolic expression through attunement and kinesthetic empathy enabled the teenagers to reflect on their personal involvement in armed conflict in a way that encouraged enhanced awareness of belonging to the broader humanity. The intervention therefore fostered conditions that led participants to create a public performance highlighting their dual roles as both victims and perpetrators in the war. This, in turn, advanced their reconciliation within the local community.”¹³ Dance therapy is even used in this geographic area to help victims of torture as well. It was found that dance movement therapy created empathy in people who had been through trauma, and also found that a “physical alteration,” a change in physical state or ability, could allow people to enter a “new phase in the life cycle” and enable them to move past their trauma.

While recovering from war time atrocities is obviously one of the most extreme examples of trauma, if dance movement therapy works in that environment, it is no wonder that it is highly effective for a more “Average Joe” type of person who has been through a rough break up or divorce, lost a loved one, or been in an abusive relationship. While it is apparent that dance is highly effective in case of mental disease or distress, it is equally effective in matters of physical health as well.

Physical: Neurological
Dystonia/Parkinson's, Brain Tumor, Stroke

In addition to Alzheimer's and Dementia, Parkinson's disease has become one of the most noted and studied arenas where dance therapy is being used. It is more widely recognized by the general populace due to recent and frequent coverage in media outlets. I was able to interview someone with Dystonia, a relative disease to Parkinson's, who, as shown in the selected quotes section, said that no physical movement modality or other activity had helped them overcome the disease except for dance.

While Parkinson's disease and Dystonia are neurodegenerative disorders, the effects are often physically pronounced, including impaired balance, impaired movement and walking, uncontrollable muscle spasms, twitching, shaking, and loss of motor skills. A study titled "Dance as Therapy for Individuals with Parkinson's Disease" published by the *European Journal of Physical and Rehabilitation Medicine* noted that loss of balance, impaired gait, and inability to walk backwards can be extremely dangerous. In studying a group of PD patients for six months, 70% of them had a fall, which is alarming given that PD sufferers are 3.2 times more likely to sustain a fracture after a fall.¹⁴ It can also cause social isolation, muscle weakness, low self-esteem, issues with cognition, and depression, all of which drastically reduce quality of life, but many of which have already been noted that dance has great effect in addressing. The study found that the music involved with dance provided an external cue which internally the brain is lacking in PD sufferers, which facilitates movement. Dance also teaches specific movement strategies, provides balance exercises in which "one must control balance dynamically and respond to perturbations within the environment," and improves strength, flexibility, and cardiovascular function. In comparison to a traditional exercise group, which showed no

improvement in categories of balance, walking speed, and control, participants who went to a ten week tango class showed significant improvement in balance and slight improvement in walking speed, though even what the study considers to be slight was the highest of any modality tested in the study. Scores for improvement, even the “slight improvement” categories were above the threshold for meaningful change, making dance therapy qualify as clinically meaningful in these areas. The article summarized the findings in saying “Dance appears to meet many, if not all, of the recommended components for exercise programs designed for individuals with PD. The benefits of dance include improved balance and gait function as well as improved quality of life. Most studies of dance for PD have included primarily individuals with mild to moderate PD. While benefits can be obtained with a short, intensive dance intervention, longer interventions may prove to be more effective. Much remains to be studied in several areas, including the mechanisms by which dance conveys benefit to those with PD and the long-term effectiveness of dance as therapy for this population.” While much does indeed remain to be studied, it is clear that dance is extremely promising for PD and Dystonia sufferers.

I also was able to interview people who have suffered from brain tumors and strokes whose effects, they believed, were improved by dance. These conditions are categorized broadly by the term neurological trauma and can be caused by a variety of factors. One study entitled “Dance/Movement Therapy with Older Adults Who Have Sustained Neurological Insult: A Demonstration Project” published by the *American Journal of Dance Therapy* looked at how dance therapy could impact people who have suffered from these types of neurological injury.¹⁵ With twice weekly dance therapy over

the course of five months, the study found improved balance, gait, and cognitive performance in the participants.

Another study entitled “New framework for rehabilitation – fusion of cognitive and physical rehabilitation: the hope for dancing” issued by *Frontiers in Psychology* argued that many neurorehabilitation programs often only have little impact due to being either primarily physical or primarily cognitive in nature. ¹⁶ Physical activity is common enough in neurorehabilitation, with its primary benefits being increased neuroplasticity, increased blood vessel delivery of nutrients to the brain, and promotion of cell regeneration. Music based activities are also cited as having their own set of benefits: “Listening to music can lead to the engagement of various sensorimotor, cognitive and emotional processes in the brain, leading to widespread activity of temporal, frontal, parietal, subcortical, and cerebellar regions. With music listening being an engaging and cognitively stimulating activity, it has also been explored as a potential tool for neurorehabilitation.” One could, therefore, look at dance and immediately see its appeal as a neurological therapy, because it is both physical and cognitive and provides both sets of benefits.

Dance has become one of the most effective remedies for people suffering from neurological degenerative disorders and neurological trauma that is currently available. Because it requires both physical and mental energy to do, it aids in the physical effects on the body caused the breakdown in the brain. For similar reasons, dance is also extremely helpful in matters of the breakdown of the body as well.

Physical: Muscular/Skeletal
Fibromyalgia, Multiple Sclerosis, Muscle/Joint Degeneration

The transformation dance can provide to people who are suffering from physically debilitating disease is dramatic. One interviewee who suffers from Fibromyalgia said that dance gave them the freedom to no longer be a “person with a disability” but rather, just a dancer. A personal friend who dances and suffers from Multiple Sclerosis has told me that had they not started dancing a few years ago, doctors had anticipated that they would be wheelchair bound by this point in time. It seems almost counterintuitive to say to that people losing control of their body to various degrees would benefit from an activity that requires massive amounts of body control, but academic studies support what many people had to say about it, that it is, in fact, tremendously helpful.

Multiple Sclerosis is a physically debilitating disease caused by either a failure of the immune system or of certain nerve cells in the brain that eventually damages the brain and spinal cord. Many common side effects are loss of muscle control, an inability to feel certain limbs, problems with coordination and walking, muscle weakness, muscle spasms, and variety of other physical, cognitive, and psychological effects. My aforementioned friend who dances does so despite the fact that they cannot feel their feet, and their muscles can seize or spasm at any time. A study entitled “Ballroom Dance for People with Multiple Sclerosis: A Pilot Study” published in the journal *Medicine and Science in Sport Exercise* observed people who had been confirmed to have MS over the course of six to eight weeks of ballroom dance lessons to see if dance could improve their condition.¹⁷ Similar to research conducted on Parkinson’s, the hope was that dance could

provide external rhythm, balance, coordination, and muscle control lost due to the disease. At the end of the study there was an increase in PROMIS scores, aka the Patient-Reported Outcomes Measurement Information System, which is a set of measures that evaluates physical, mental, and social health, and is often used to evaluate chronic conditions like MS.¹⁸ There was also an improvement in this same test, but specifically the mental health component, as well as PASAT scores (Paced Auditory Serial Addition Test) which analyzes how quickly MS patients can process cognitive information, and Berg Balance scale scores, which as the name suggests, analyzes balance and coordination. An improvement in all areas of life seems to provide strong support for the idea that can transform the lives of those with chronic physical conditions.

As mentioned previously, an interviewee diagnosed with Fibromyalgia had to move from traditional dancing to a genre of dance known as ParaDancesport, which allows for people to dance competitively in wheelchairs, due to physically debilitating nature of the disease. Fibromyalgia is characterized by widespread musculoskeletal pain, fatigue, and issues with cognitive functions, which seems like it would not combine well with dance on the surface. However, a clinical trial entitled “Effectiveness of Dance on Patients with Fibromyalgia” conducted by the Federal University of Sao Paulo would indicate the contrary.¹⁹ 40 women underwent 32 weeks of belly dance classes and were measured and compared to a control group who underwent no dance therapy. The group who underwent the dance therapy showed significant score improvements in their levels of pain, their speed and ability on a six-minute walk test, their quality of life, mental health, level of impairment, depression, anxiety, and self-image. In an analysis of 13

different outcome goals being looked at, the group who danced showed improvement, often significant improvement, over the control group in every category. ²⁰

While these are not the only physically debilitating conditions dance has the ability to improve, they provide insight into the expansive possible uses of dance therapy in treatments for such diseases. As proven time and time again throughout this project via analysis of various scientific studies, dance has the power to improve both physical and cognitive performance, and slow and ease the effects of a variety of diseases. Dance is a quality therapy choice for both highly specific conditions, or a broader look at general wellness as well.

Physical: General Health and Wellness
Obesity, Self-Image

Many interviewees with whom I spoke to may not have suffered from a specific condition or disease but did attest to the general health and wellness benefits dance provides to their life. Many spoke of weight loss, healthier joints and muscles, more self-confidence, more flexibility, and an increased sense of happiness as a result of these effects, all of which I too experienced. According to most recently available Center for Disease Control data (CDC) from 2016, 71.6% of Americans were found to be overweight, with almost 40% of that number falling into the obese category.²¹ This number has only grown in the past few years and could soon become crisis levels-meaning some movement could be just what this country needs.

Many of the above listed benefits dance can provide are tied together. For example, as I mentioned in my story with dance, my obesity was directly linked to my anxiety and low self-esteem. A study published by the journal *Patient Education and Counseling* entitled “Dance Therapy Improves Self-Body Image Among Obese Patients” tackled this exact topic head on.²² 18 obese patients were enrolled in a dance therapy workshop for 36 weeks and then were evaluated using “questionnaires addressing health-related quality of life, sensorial-motor perception, and mental representations linked to body schema and self-body image.” At the end of the study results showed significant improvement in health-related quality of life and body image perceptions. The study also reported a change in psychological and social personality traits, including namely a changed perception to an initial reluctance to participate in physical activity. The study is built on foundational knowledge that in general, obese people can often have a harder

time getting in touch with their feelings, have fairly limited range of motion, and poor sensory motor perception as a result of not doing much movement, due to self-awareness of their limited range of motion. Dance is the perfect discipline to address all of these issues, which is likely why it is so highly effective in the field of obesity and weight related health.

Being a healthy weight puts less strain on the joints and muscles, which yields less pain and more strength in these areas. Keeping physically fit through dance is a way to stay or get healthy while also improving self-esteem, confidence, and body image. No matter what angle you approach looking at dance from, the benefits are always holistic in nature. Physical benefits always come with mental or cognitive ones and vice versa.

Conclusion

The conditions and diseases detailed here that are improved by dance movement therapy are only the tip of the iceberg. There are many more conditions that have undergone studies involving dance therapy, and hundreds of other articles that speak to the massive impact dance has on people's lives. The statement I strove to confirm when I started this project was that dance has a transformational effect on people's lives and has a special quality that belongs to dance alone. Through interviews and science, experience and research, I have confirmed my hypothesis to be true. Everyone I spoke to had a story to tell, and had been changed dramatically by their relationship with dance. It became part of their identity as much as it became part of mine. One of my favorite quotes from the interviews was "You should just dance. Just do it." I agree, science and researchers agree, other dancers agree: Everyone should at least try dancing. It truly does change people's lives, and I am ecstatic to continue my journey through dance.

Appendix A

IRB
INSTITUTIONAL REVIEW BOARD
 Office of Research Compliance,
 010A Sam Ingram Building,
 2269 Middle Tennessee Blvd
 Murfreesboro, TN 37129



IRBN001 - EXPEDITED PROTOCOL APPROVAL NOTICE

Tuesday, May 21, 2019

Principal Investigator **Cassidy Johnson** (Student)
 Faculty Advisor Angela Ramos
 Co-Investigators NONE
 Investigator Email(s) *cmj5@mtmail.mtsu.edu; angela.ramos@mtsu.edu*
 Department Media & Entertainment and Health & Human Performance

Protocol Title **A journey through dance**
 Protocol ID **19-2246**

Dear Investigator(s),

The above identified research proposal has been reviewed by the MTSU Institutional Review Board (IRB) through the **EXPEDITED** mechanism under 45 CFR 46.110 and 21 CFR 56.110 within the category (7) *Research on individual or group characteristics or behavior*. A summary of the IRB action and other particulars in regard to this protocol application is tabulated below:

IRB Action	APPROVED for ONE YEAR		
Date of Expiration	5/31/2020	Date of Approval	5/21/19
Sample Size	50 (FIFTY)		
Participant Pool	Primary Classification: Healthy Adults - 18 years or older Specific Classification: Self identified dancers		
Exceptions	1. Approved for multiple modes of interaction during data collection: verbal, email, online, and telephone. 2. Voice recording permitted as proposed in the protocol		
Restrictions	1. Mandatory signed informed consent; the participants must have access to an official copy of the informed consent document signed by the PI. 2. Data must be deidentified once processed. 3. All identifiable data/artifacts that include audio/vdeo data, photographs, handwriting samples, and etc., must be used only for research purpose and they must be destroyed after data processing. 4. Identifiable information must be destroyed as described in the protocol		
Comments	NONE		

This protocol can be continued for up to THREE years (**5/31/2022**) by obtaining a continuation approval prior to **5/31/2020**. Refer to the following schedule to plan your annual project reports and be aware that you may not receive a separate reminder to complete your continuing reviews. Failure in obtaining an approval for continuation will automatically result in cancellation of this protocol. Moreover, the completion of this study MUST be notified to the Office of Compliance by filing a final report in order to close-out the protocol.

IRBN001

Version 1.3

Revision Date 03.06.2016

Post-approval Actions

The investigator(s) indicated in this notification should read and abide by all of the post-approval conditions imposed with this approval. [Refer to the post-approval guidelines posted in the MTSU IRB's website.](#) Any unanticipated harms to participants or adverse events must be reported to the Office of Compliance at (615) 494-8918 within 48 hours of the incident. Amendments to this protocol must be approved by the IRB. Inclusion of new researchers must also be approved by the Office of Compliance before they begin to work on the project.

Continuing Review (Follow the Schedule Below:)

Submit an annual report to request continuing review by the deadline indicated below and please be aware that **REMINDERS WILL NOT BE SENT.**

Reporting Period	Requisition Deadline	IRB Comments
First year report	4/30/2020	NOT COMPLETED
Second year report	4/30/2021	NOT COMPLETED
Final report	4/30/2022	NOT COMPLETED

Post-approval Protocol Amendments:

Only two procedural amendment requests will be entertained per year. In addition, the researchers can request amendments during continuing review. This amendment restriction does not apply to minor changes such as language usage and addition/removal of research personnel.

Date	Amendment(s)	IRB Comments
NONE	NONE.	NONE

Other Post-approval Actions:

Date	IRB Action(s)	IRB Comments
NONE	NONE.	NONE

Mandatory Data Storage Requirement: All of the research-related records, which include signed consent forms, investigator information and other documents related to the study, must be retained by the PI or the faculty advisor (if the PI is a student) at the secure location mentioned in the protocol application. The data storage must be maintained for at least three (3) years after study has been closed. Subsequent to closing the protocol, the researcher may destroy the data in a manner that maintains confidentiality and anonymity.

IRB reserves the right to modify, change or cancel the terms of this letter without prior notice. Be advised that IRB also reserves the right to inspect or audit your records if needed.

Sincerely,

Institutional Review Board
Middle Tennessee State University

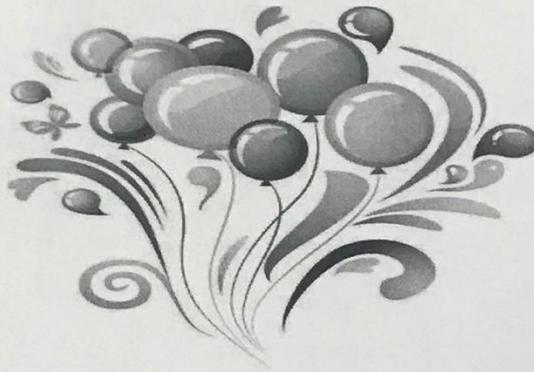
Quick Links:

[Click here](#) for a detailed list of the post-approval responsibilities.
More information on expedited procedures can be found [here](#).

Appendix B

THE BALLOON THEORY

IMAGINE THAT YOU ARE STANDING ON THE GROUND HOLDING ONTO **FIVE BALLOONS**. EACH BALLOON REPRESENTS A PART OF YOU- **THE EMOTIONAL, MENTAL, SOCIAL, SPIRITUAL, AND PHYSICAL PARTS**. YOUR FIVE BALLOONS CAN INFLATE OR DEFLATE WITH HELIUM, DEPENDING ON WHAT IS HAPPENING IN YOUR LIFE.



BECAUSE ALL THE BALLOONS ARE CONNECTED, ANY UPWARD MOTION OF ONE BALLOON WILL CREATE A PULLING EFFECT ON THE OTHERS.

IF, FOR EXAMPLE, YOU ABUSE YOUR PHYSICAL HEALTH THROUGH SLEEP DEPRIVATION, POOR DIET, CHRONIC INJURY, OR DRUGS, YOU WILL ALSO BE AFFECTED MENTALLY, EMOTIONALLY, SOCIALLY, AND SPIRITUALLY.

Notes

¹ <http://m2dance.com>

² <https://www.gofundme.com/f/help-cassidy-change-lives-with-dance-thesis-fund>

³ <https://mtsunews.com/dance-fitness-help-student-shed-100-pounds/>
<https://www.dnj.com/story/news/local/schools/mtsu/2019/05/13/mtsu-student-sheds-100-pounds-help-campus-rec-center/1188818001/>
<https://fox17.com/news/local/transformation-story-how-one-mtsu-student-lost-more-than-100-lbs-through-dance>
<https://www.wbrc.com/2019/06/12/shy-introvert-life-party-with-right-kind-moves/>

⁴ <https://www.gktw.org>

⁵ <https://www.youtube.com/watch?v=PHi0gDeMjrU>

⁶ Wurtman, Judith J. “Dancing Away the Blues.” *Psychology Today*, Sussex Publishers, 7 Sept. 2017, www.psychologytoday.com/us/blog/the-antidepressant-diet/201709/dancing-away-the-blues.

⁷ Lesté, A. & Rust, J. *Am J Dance Ther* (1990) 12: 19.
<https://doi.org/10.1007/BF00844312>

⁸ <https://rxballroomdance.com/about-us/>

⁹ <https://www.thealzheimersproject.org/what-is-the-alzheimers-project/>

¹⁰ Verghese, Joe, et al. “Leisure Activities and the Risk of Dementia in the Elderly.” *New England Journal of Medicine*, vol. 348, no. 25, 2003, pp. 2508–2516.,
[doi:10.1056/nejmoa022252](https://doi.org/10.1056/nejmoa022252).

¹¹ Klimova, Blanka, et al. “Dancing as an Intervention Tool for People with Dementia: A Mini-Review Dancing and Dementia.” *Current Alzheimer Research*, vol. 14, no. 12, 2017, [doi:10.2174/1567205014666170713161422](https://doi.org/10.2174/1567205014666170713161422).

¹² Westrhenen, Nadine Van, and Elzette Fritz. “Creative Arts Therapy as Treatment for Child Trauma: An Overview.” *The Arts in Psychotherapy*, vol. 41, no. 5, 2014, pp. 527–534., [doi:10.1016/j.aip.2014.10.004](https://doi.org/10.1016/j.aip.2014.10.004).

¹³ Harris DA. Pathways to embodied empathy and reconciliation after atrocity: former boy soldiers in a dance/movement therapy group in Sierra Leone. *Intervention (Amstelveen)* 2007;5:203–31.

-
- ¹⁴ Earhart, G M. “Dance as therapy for individuals with Parkinson disease.” *European journal of physical and rehabilitation medicine* vol. 45,2 (2009): 231-8.
- ¹⁵ Berrol, C.F., Ooi, W.L. & Katz, S.S. *American Journal of Dance Therapy* (1997) 19: 135. <https://doi.org/10.1023/A:1022316102961>
- ¹⁶ Dhami, Prabhjot, et al. “New Framework for Rehabilitation :‘ Fusion of Cognitive and Physical Rehabilitation: the Hope for Dancing.” *Frontiers in Psychology*, vol. 5, 2015, doi:10.3389/fpsyg.2014.01478.
- ¹⁷ Suh, Jimin, et al. “Ballroom Dance for People with Multiple Sclerosis.” *Medicine & Science in Sports & Exercise*, vol. 46, 2014, p. 668., doi:10.1249/01.mss.0000495475.79534.45.
- ¹⁸ *PROMIS*, www.healthmeasures.net/explore-measurement-systems/promis.
- ¹⁹ Baptista, Andrei Salvador, et al. “Effectiveness of Dance in Patients with Fibromyalgia: a Randomized, Single-Blind, Controlled Study.” *Clinical and Experimental Rheumatology*, U.S. National Library of Medicine, 2012, www.ncbi.nlm.nih.gov/pubmed/23020850?dopt=Abstract.
- ²⁰ “Effectiveness of Dance on Patients With Fibromyalgia - Study Results.” *Study Results - ClinicalTrials.gov*, clinicaltrials.gov/ct2/show/results/NCT00961805.
- ²¹ “FastStats - Overweight Prevalence.” *Centers for Disease Control and Prevention*, Centers for Disease Control and Prevention, www.cdc.gov/nchs/fastats/obesity-overweight.htm.
- ²² Muller-Pinget, Solange, et al. “Dance Therapy Improves Self-Body Image among Obese Patients.” *Patient Education and Counseling*, vol. 89, no. 3, 2012, pp. 525–528., doi:10.1016/j.pec.2012.07.008.