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Shaped by Dance

Everyone ages with every passing moment. Unfortunately, the older we get, the more mental challenges we are likely to face. These challenges may come in the form of mental health disorders such as depression, or aging issues such as dementia. Finding a way to help combat these problems is vital for a healthy life. I have found that a person may be recommended many different medications, therapies, and suggestions to try and help counteract and combat these disorders. However, there is one activity which seems to stand out from among the others, and its name is dance. Dance positively impacts the plasticity of our brain along with other benefits to the body which can aid those with mental health disorders and can counteract issues associated with aging.

Now, I have heard countless people say, “I can’t dance,” or “I have two left feet.” I can understand how people may feel intimidated to start dancing. Viewing videos of professionals dancing can be inspiring for some, while for others it can make dance seem impossible by providing unrealistic expectations of what dance must look like. I would like to mention that dance has a wide spectrum of possibilities for participation: from people just moving for fun to people who compete professionally. Picture a toddler who hears a song. This toddler has not learned to dance specific styles, but it is their natural response to move around to the tune. Dance is movement. Dance is diverse, and dance is accepting!

It is clear to most where my passion lies. Dance has been a very important constant in my life. Through all the challenging moments life has dispersed my way, I have always had dance to fall back on. I have seen the benefits of dance within myself and in others firsthand. The internal and physical benefits of dance truly surpass other activities as it is a whole mind-body exercise. Through observation, I have witnessed people become happier and gain more confidence through dancing. Curiosity led me to wonder, what does dance actually do for your brain and body? Also, how can dance help people for the long term?

There have been studies on how dance positively impacts the plasticity of our brain and our overall bodily functions. Dance is widely considered an all-inclusive exercise as it involves much of your mind and body to be able to enact. As Bursynska et al's study presents, "[Dance] involves motor, cognitive, visuospatial, social, and emotional engagement". This means that our mind and motor functions are engaged through dance. Motor functions such as the head, hand, trunk, and leg representations become enhanced (Giacosa et al). In exchange, people may also find that their spatial awareness improves. Further benefits to the body that are also important to mention are the improvements to posture, balance, and lessened loneliness. (Teixeira-Machado, et al).

As one will notice, there are many positive changes that happen within our brain and body as a result of dancing. Just like with generic exercising, Dr. Lovatt says that dance gives a "release of feel-good endorphins into the bloodstream... [and] helps reduce levels of cortisol – a stress hormone." (Halliwell). Dance engages much more than just your body due to the use of active thinking, unlike generic exercising.

Another aspect of dance is how it mediates a person's emotional state. The promotion of emotional wellbeing along with social interaction has been supported strongly through dancing.

For ages, dance has been a means of social engagement and used as a form of communication. There is an inclusiveness that encompasses dance by providing a safe outlet of expression for people. The connection of the music felt through the movement of your body and your connection into the floor can be a very freeing experience for many. It can even be used as a grounding method to give someone both an outlet and a purpose. This sense of security and freedom makes dance perfect for use in therapy. It is the emotional support which dance provides that embarks on helping those with mental health disorders such as depression.

All of these benefits may seem unreal. However, by looking to scientific studies and evidence of brain function, we can begin to process how dance makes all of this happen. There are a variety of methods used to study the benefits of dance, most common are the use of Magnetic Resonance Imaging (MRI). Using MRI studies, one can view how the brain becomes engaged through dance. The brain's plasticity can also be shown in this manner. Viewable from the MRI studies are the changes of white matter and grey matter within the brain (Teixeira-Machado, et al and Giacosa et al). If you are like me at all, you may have felt lost by this study's observation. To break it down, the grey matter is an information processor which controls "sensory and muscular activity" and the white matter is what helps our brain communicate and therefore react from the grey matter to the rest of our body (*The Human Memory*). With this explanation, there is a better understanding of the changes experienced within the brain. In turn, we can gain a better perspective on how this effects our mind and body overall.

The areas that show the most significant increase in the brain are the areas that contribute to a person's attention, auditory and visual response, along with memory (Rehfeld et al). There were improvements shown in many areas of memory such as spatial memory and verbal memory

(Teixeira-Machado, et al). With those presenting benefits to the brain, it is clear why dance has been used as an aid against aging issues associated with dementia.

With so many apparent benefits, it is not surprising to learn that dance can be used as a therapy form to help fight mental disorders. Dance (more specifically in this case study, Dance Movement Therapy) helps provide an outlet to connect, to express, and to help let go of emotions (Fletcher and Gerschwitz). This is a perfect option for those who are seeking help but do not feel comfortable with talk therapy. Dance movement therapy (DMT) places a focus on the connection between your mind and body.

Just as there are many different styles and forms of dance, there are also different methods of DMT which can achieve different goals. Countless methods can be put into practice to invoke different interactions and outcomes. DMT is often practiced in a group setting with the moderator/therapist. This individual may start the group off with a movement, though the direction and the movement will change with each participant's interpretation. Others may adapt another's movement and the motion as a whole will evolve. This method serves to help those who experience a lack of attention or the ability to relate. Gross-Cohen and Eisikovits wrote an article where they interviewed and observed dance movement therapists. They mention that there are studies that delve into how the body can internalize and store experiences as memories (Gross-Cohen and Eisikovits). It is through DMT that one can potentially bring out those memories and work through them. From the perspective of a therapist, DMT provides a portal to understand more. Dance movement therapists' outlook brings into focus the self-realization and improvement one can experience through dance and movement.

Another study on the psychophysiological effects of DMT with mild dementia patients goes to prove how dance, as used for therapy, shows a significant decrease in depression,

loneliness, and negative mood along with increased cognitive function (Ho et al). For this reason, dance is such an important activity for those struggling with their mental health. I am sure many people can relate to the emotional state that is associated with depression. I am always amazed at how dance helps provide a release from these feelings and allows you to channel those difficult emotions into something empowering.

It is also incredible how participation in DMT can help decrease the risks of aging related mental disorders such as dementia (Ho et al). People who suffer from Dementia are likely to experience impairment of memory, language, and daily functions, while also experiencing behavioral changes (Ho et al). A study by New England Journal of Medicine shows that dancing frequently has the greatest results in helping reduce the risks of dementia by 76% (Powers). By participating in dance, the mind is constantly being engaged in a variety of areas including the motor functions.

Dance has no age limit for when you can start. There are, however, differences in the impact that dance has on both mind and body at different ages and stages of life. There is a study of brain functions that includes young individuals and older adults and presents some of these differences.

In this study, Kirsch et al. selected a group of young individuals and older adults that lacked dance training. They participated in evaluations, MRI testing, and simulation training. The end results showed that younger individuals excel in physical implementation which may be due to “overall better physical condition and motor learning abilities” (Kirsch, et al). Whereas older adults scored similarly with the younger individuals in the visual recognition (Kirsch, et al). It was discovered that observational training for young people showed very little increase in the activation of the brain. In fact, it was noticed that there was a decrease of engagement in parts

of the right hemisphere of the brain. While for the older adults, there was some increase in activation of the right part of the brain with no significant decrease of activity elsewhere. (Kirsch, et al). There were a few other differences noted in their study. Ultimately, it was determined that the older adult may have more physical limitations than that of a younger individual, but they can still benefit from the training. The brain functions utilized by the young group and the older adult group did differ in an unexpected way.

Dance is said to have longer lasting effects for a person's daily functioning (Ho et al). As it is a full mind-body experience, it aids in improving a person's cognitive abilities and motor functions. These are the commonly affected areas of the brain and body when it comes to aging issues such as dementia. Although the effects of dance are longer lasting than generic exercising, dancing more often is a healthier choice for physical and mental well-being (Ho et al).

The possibilities to enhance plasticity of your brain increase the sooner you begin to dance (Powers). There is already evidence that older adults who have never received dance training can benefit from starting dance. So of course, you are likely to benefit even more if you start at a younger age. It was Powers' recommendation that people develop new mental pathways so that when age starts to make some paths fade, there are still many other routes one can take (Powers).

It is important to realize that although all dancing is healthy for people in some way, there are some important differences to understand. As I personally believe, dance is movement. If you can move, you can dance! It is not necessarily necessary to pursue dance training in order to receive benefits as all forms of dance will be beneficial in some way. Fascinatingly enough, there are noticeable differences between social and professional dancing when it comes to benefits to the brain and body.

Social partner dancing, such as ballroom, is speculated to hold the most benefits to the aging brain (Powers). As someone who has tried countless styles of dance, I can vouch for how different social partner dancing is and how much more of a brain workout it is compared to other styles. There is a lot of non-verbal communication that goes on between partners. Being able to interpret those cues is part of the challenge that stimulates the brain. This dance form also encourages social interaction which is also healthy for the brain and for a person's emotional well-being.

As has been shown, there are various forms of dance and all are in your health's best interest. Different styles of dance will utilize different motor functions and can have a greater effect on the plasticity of the brain with long term use and training (Giacosa et al). It was proved that training for dance, long term, improves motor functions of the brain (Giacosa et al). It certainly requires extensive work and dedication to pursue dance professionally. It is worth the investment since it is also beneficial to your health.

In opposition, a study shows that professional dance mainly enhances motor functions and balance in comparison to the many more benefits one can gain from social dance (Bursynska et al). Often, the mental health benefits are less likely to be gained as there is immense focus placed on the body rather than on the emotional and social aspects of dance. It is hypothesized that people who specialize in dance engage less of their brain to perform tasks (Teixeira-Machado, et al). This is an understandable hypothesis due to the thought process of "practice makes permanent." With this quote in mind as we think of dance, the more a person practices dance moves or figures, the more they develop muscle memory. With enough time, the dance moves or figures come more naturally and with less thought involved. It would make sense that

those who specialize in dance would engage less of their brain to perform tasks, though this has not been studied in depth.

Needless to say, there are still benefits gained from professional dancing. Growing up, I engaged in many different forms of dance. I have noticed that the various forms have helped me in many ways. Through this dancing journey, one form resonated most with me and that is ballroom dance. There was a desire to learn more and I began to crave an aspect of dance I had yet to experience for myself. I aspired to become a professional ballroom dancer. With this goal in mind, I began training with a professional coach and have been building my abilities from the ground up. What I did not realize was what effects this would have on me outside of dance. I find that I have more spatial awareness and focus, things which I had often struggled with growing up. I find it incredible how dancing so significantly engages the brain and our motor functions. It really is a completely different experience to train towards a professional career in dance or to dance just for fun. Both are equally beneficial in different ways.

Dance is very diverse and is an ever changing and growing expression form. It is both art and sport. I admire that there is never a cap on what one can learn since dance will forever evolve. Through movement, I have found a way to express what I cannot with words. Through partner dancing I have learned communication and have seen an improvement in happiness and a decrease in anxiety levels. All these things are achievable, even to a person who has never received dance training.

As previously brought to light, dance is movement. If you can move, you can dance. It is worth taking those first few scary steps so that you can then dance your way through life and reap the benefits of a healthy mind and body. The next time that you hear your favorite song, do

not resist the urge to move with the music. For that urge may just be the joy of dance, and your mind and body can only benefit from the movement.

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