



## King's Research Portal

*Document Version*  
Peer reviewed version

[Link to publication record in King's Research Portal](#)

*Citation for published version (APA):*

Davies, A., & Noonan, I. P. (2018). The therapeutic use of dance for people with Parkinson's disease. *Irish Association of Creative Arts Therapists Journal*, 11-16.

### **Citing this paper**

Please note that where the full-text provided on King's Research Portal is the Author Accepted Manuscript or Post-Print version this may differ from the final Published version. If citing, it is advised that you check and use the publisher's definitive version for pagination, volume/issue, and date of publication details. And where the final published version is provided on the Research Portal, if citing you are again advised to check the publisher's website for any subsequent corrections.

### **General rights**

Copyright and moral rights for the publications made accessible in the Research Portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognize and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the Research Portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the Research Portal

### **Take down policy**

If you believe that this document breaches copyright please contact [librarypure@kcl.ac.uk](mailto:librarypure@kcl.ac.uk) providing details, and we will remove access to the work immediately and investigate your claim.

## **The Therapeutic Use of Dance for People with Parkinson's Disease**

Alice Davies RN (Adult) BSc (Hons)

Registered Nurse

Florence Nightingale Faculty of Nursing, Midwifery & Palliative Care, King's College London

Ian P S Noonan BMus (Hons) PGCMTh DipHE MSc PGCAP FHEA RN (Mental Health)

Head of Department of Mental Health Nursing, Florence Nightingale Faculty of Nursing, Midwifery & Palliative Care, King's College London

[ian.noonan@kcl.ac.uk](mailto:ian.noonan@kcl.ac.uk)

### **Abstract**

This paper uses English National Ballet's Dance for Parkinson's programme to illustrate a literature review of the benefits of dance for people with Parkinson's disease. To illustrate the creative and therapeutic use of dance in the company's programme, a distinction is drawn between dance therapy and the experience of being part of a dance company. Short-term improvements in physical symptoms, and subjective improvements in psychological wellbeing are noted, but the benefits of being part of a creative work of dance in terms of social interaction and quality of life appear longer lasting. These appear to emerge from the artistry, self-expression and collaboration in the performance of dance with a professional company, in addition to the benefits of dance therapy in a clinical context.

**Keywords: Dance; Parkinson's disease; Creativity; Movement**

## The Therapeutic Use of Dance for People with Parkinson's disease

The paper explores the evidence for the therapeutic use of dance for those with Parkinson's disease (PD), specifically exploring what impact the application of dance as a social activity and artistic outlet for the participants, rather than as a medical therapy, has on its effectiveness in relieving symptoms of PD and increasing quality of life. This was the aim of the 'Dance for PD' programme which was founded in New York by the Mark Morris Dance Group in 2001. By developing this programme, the Dance for Parkinson's UK organisation has now established itself as the leader in dance therapy for PD in the UK. The ideas and literature explored here will focus on groups run by this organisation, finally looking at the unique programme set up by ENB. The Creative Health, and Arts in Health movements have gathered increased momentum, and over the past decade shown greater integration of arts practitioners working creatively for health and wellbeing outcomes, alongside and in collaboration with arts therapists delivering individual and group interventions for specific conditions and with specific therapeutic aims. This integration has been evaluated in the *Art, Health and Wellbeing Inquiry Report* (APPG 2017). The report demonstrates an increased presence of arts in health and care environments such as: participatory arts programmes; arts therapies; arts on prescription; and medical humanities in medical and allied health professional training. The importance of this integration is the impact on everyday creativity, attendances at cultural venues and events, individual and group wellbeing, and social inclusion. This case study illustrates these integrated outcomes of inclusion, creativity, participation and wellbeing in the Dance for PD programme.

Parkinson's is a neurodegenerative disease which affects 1-2% of people over 60. Symptoms include decreasing stability and coordination, development of muscle rigidity and tremors (Olanow et al. 2009). As a result, people experience bradykinesia, stooping posture and a 'shuffling gait' leading to increased risk of falls (Griffin et al. 2008). These physical symptoms affect patients' psychological and

social wellbeing. Research into the psychological effects of these symptoms suggests that 90% of people with PD suffer from anxiety, depression and social isolation, which often impact on their quality of life and on the lives of those around them (Ketharanathan et al. 2014; Landau et al. 2016).

There have been many studies which have found exercise and motor training to have positive outcomes on movement, balance and strength in people with PD (Crizzle & Newhouse 2006; Goodwin et al. 2008; Dibble et al. 2009; Allen et al. 2010). However, much of this motor training is in the form of physiotherapy (Allen et al. 2012). It has been reported that adherence to these exercise programmes is often low, due to the lack of motivation and inspiration to participate (Keus et al. 2004). With the psychological and social needs of patients not being met, the use of therapeutic arts, which may meet these needs, should be considered.

Since the recognition of the psychological impact of ageing and the long term conditions which often develop with ageing, there has been a significant increase in the therapeutic use of the arts in older people, those over 65 years old (DH 2011) who are the group in which PD is most prevalent (Pringsheim et al. 2014). This has been particularly identified as being a problem amongst those with long term conditions like PD.

A study carried out by the American Society of Ageing across the USA sought to measure the impact of professionally run artistic community projects on the physical, mental health and social needs of older people with a range of health conditions (Cohen 2006). The study concluded that these activities produced positive health outcomes for the participants. This was achieved by enabling the participants to experience a sense of mastery (Rodin 1986) which in turn gave participants a sense of control. Pioneering research on ageing carried out by Rodin (1986) and Rodin (1989) associated these feelings of mastery and control with health improvements in older people. This can be extrapolated and applied to those with PD because, as stated by Schrag et al. (2000), lack of control

over their lives is a major concern. These concepts can also be applied when looking at the use of dance to improve health outcomes in PD. The arts in general, and specifically dance, can be used to provide this sense of mastery or control as it provides the opportunity for new achievements and to create something beautiful which can give satisfaction and empowerment (Cohen 2006). As a result of an increased feeling of control over their lives, the participants in the study reported an increased feeling of capability to perform in all areas of life, not just in the therapy programmes (Cohen 2006). Having discussed the importance of arts therapies, the specific use of dance as the art form to facilitate improved outcomes, physically, psychologically and socially will be explored.

There has been a significant amount of research which has found dance to lead to short term improvements in the physical symptoms of PD. A case study carried out by Hackney & Earhart (2010) on one member of a Dance for Parkinson's group concluded that there were improvements in balance and gait after 12 sessions, evidenced by improved scores on the Fullerton Advanced Balance (FAB) Scale (Rose et al. 2006), a quantitative test used widely in assessing balance and stability in those with PD (Hernandez & Rose 2008; Batson 2010). These findings were corroborated in two studies carried out by Houston & McGill 2011 and 2013 on the participants of the ENB's programme which found a statistically significant increase in FAB score on completion of the programme (Houston & McGill 2011; Houston & McGill 2013). It is, however, worth noting that due to the unique presentation of PD in different people, the use of one test to make conclusions about the physical benefits of dance is limited as it may not encompass certain improvements made by the individuals or may exclude areas of deterioration (Crizzle & Newhouse 2006). Also, non-physiological factors may affect the results (Houston & McGill 2011). For example, one test within the FAB scale which assesses postural stability requires the participant to transfer their body weight to the hands of the tester who then pulls their hands away. The ability of the participant to rebalance themselves is then assessed (Hernandez & Rose 2007). It was noted in the assessment that when this was carried out at the end of the programmes, the participants would more freely allow their weight to

be held by the tester, which therefore skewed the results to represent a more significant increase in postural stability (Houston & McGill 2011). However, Houston and McGill 2011 hypothesised that this may have been due to an increase in confidence and self-efficacy, as opposed to any physiological changes.

Overall, these psychological changes represent a key aspect of the findings. Throughout the research carried out into the effects of dance on those with PD, there is evidence that the participant's wellbeing, confidence and quality of life increased as a direct result of their participation (Westbrook & McKibben 1989; Westheimer 2008; Earhart 2009; Heiberger et al. 2011). Martinez-Martin (2017) concludes that quality of life is a multidimensional construct that is experienced subjectively, across physical, social, mental, and personal domains. Of the 20 item examples of Health Related Quality of Life adapted from Fitzpatrick et al (1998) in Martinez-Martin's work, all of the following relate to wellbeing, confidence and quality of life improvements reported by participants in the ballet workshops: fatigue, pain, mobility, anxiety, low mood, concentration, coping, social relationships, satisfaction, spirituality, and stigma.

With guidance from those within ENB with profound experience and knowledge of dance, their Dance for Parkinson's programme has been developed, recognising the importance and positive impact of the artistry, self-expression and collaboration provided by dance, particularly when viewed as an art form as opposed to it being seen simply as therapy (Houston & McGill 2015). These themes will now be touched upon by further exploring the research carried out at Roehampton University on the ENB Dance for Parkinson's programme.

Research carried out on other Dance for Parkinson's groups, such as Heiberger et al 2011 and Westheimer et al. (2015), has identified that overall quality of life improved throughout the programme for the participants and remained higher for a short period afterwards. Both studies

used the Quality of Life (QoL) Scale, which has been shown to provide a meaningful measurement of quality of life for people with long-term diseases such as PD (Burckhardt & Anderson 2003).

However, the use of these quantitative methods does not give a rounded picture of the impact Dance for Parkinson's has on its participants. Houston (2011), published prior to the research carried out on the ENB programme, highlights the limitations of such quantitative methods. Instead, Houston proposes using qualitative tools such as semi-structured interview and focus groups, along with acknowledging established sociological theories about disability and dance, in order that a greater understanding of the experience of dancing for someone with the PD might be gained. She also suggests that these methods may allow analysis of the experience in context with focus on the person dancing as opposed to their disease (Houston 2011).

Following on from these findings in Houston, it is recognised in Houston & McGill (2011) and Houston et al. (2015) that the ENB programme shows awareness of the importance of a strong sense of self beyond PD for their participants. This phenomenon is recognised in research by Westheimer (2008) as crucial in improving their wellbeing. PD is a condition that gradually develops through various physical changes, often with negative consequences for perceptions of self-identity (Turner 2003).

The act of dancing, and the experience of moving in a new way, may enable the individual to uncover how their experiences of PD are unique. It also helps re-frame how the disease does not define them but merely is another aspect of themselves, potentially leading to an increased sense of self (Turner 2000). PD can have a negative impact on a person's sense of self (Aarsland et al. 2012). However, Thomas (2003), demonstrates how dance can facilitate an increased sense of self, and suggests that dance could lead to the participant re-discovering themselves beyond their disease. This occurs as they are able to explore their capabilities and discover new aspects of themselves, as opposed to focusing on their disease and its limitations. Pioneering scholars of the disability

movement in the UK, such as Michael Oliver, argue convincingly that it is the 'exclusionary behaviour' of society that impairs and reduces any sense of self in those with a disability such as Parkinson's, rather than the disability itself (Oliver 1990). Therefore, through the Dance of Parkinson's programme at ENB, which focuses on its participants as dancers and not as PD sufferers, participants are allowed to re-develop this sense of self, which then leads to the improvements in wellbeing shown in the report by Houston et al. (2015).

Social isolation is often a consequence of PD (Aarsland et al. 2012). Social engagement is another important factor which led to the increases in wellbeing and quality of life reported in Houston & McGill (2011) and Houston et al. (2015). Through interviews and a focus group, Houston et al. (2015) highlighted the importance of the classes as somewhere people felt valued and could make friends. Participants in the research stated that they enjoyed how the focus on dance gave them the ability to engage with each other over something other than their PD, which they noted was usually the main topic of conversation at other PD support groups. The participants of the research also noted that the social and collaborative nature of the programme motivated them to continue attending the classes in a way that they hadn't noted at other organised exercise groups or physiotherapy sessions. Fisher et al. (2008) suggest that these findings could also have a physical impact, as adhering to exercise programmes has been shown to improve outcomes. However, more research is needed to confirm this.

A continuation of the social engagement provided was a unique feature of the ENB programme noted by Houston et al. (2015), which immersed the participants in the world of ballet more so than any other Dance for Parkinson's group. The course itself was based around the ballet *Romeo and Juliet*, which the ENB Company were also producing at the same time, allowing the Dance for Parkinson's dancers to feel part of the wider ballet company. The programme was introduced with general education about ballet. Each session was attended by members of the company, who would

assist with the repertoire. Furthermore, the group had the opportunity to watch a performance of the ballet and were given masterclasses in stage make-up and costume-making by the production team of ENB. These experiences, alongside the ballet classes, allowed the participants to continue to develop the sense of self, which was previously noted as important (Thomas 2003). The participants were able to concentrate on the many new experiences and the knowledge they had developed through the programme, as opposed to concentrating on their disease. It allowed them to see that they could still enjoy new experiences and were capable of mastering new skills, which many participants no longer believed would be possible after a diagnosis of PD. One member of the group noted in interview that the education provided about the ballet stirred past memories of what he used to enjoy and engaged his mind in a way that it had not been since before his diagnosis. This could be interpreted as a re-discovery of his sense of self, which it is clear improved his quality of life (Houston et al. 2015).

Overall, it is the high quality of education which can be provided by a leading dance company, such as ENB, and the positive effect of the sense of belonging to such a prestigious organisation which gives the ENB Dance for Parkinson's programme its uniqueness and helps enhance the improved health and wellbeing seen. This has been demonstrated through the quantitative and qualitative research discussed. Other factors, such as the longevity of impact on Health Related Quality of Life, wellbeing, and social inclusion, which could provide further insight into why the Dance for Parkinson's programme provides the positive outcomes discussed above, could be explored. However, additional research and discussion would be needed to identify other factors which have influenced the success and maintenance of effect of the programme. It might also be possible to develop and extend the principles of art-lead interventions, prioritising the integrity of the work, education, and active efforts to engage participants, to produce increased positive outcomes for those with PD and also, perhaps, to people with other long term conditions.

The overall impact for the participants seemed to be finding and celebrating a sense of self not defined by their disease. This sense of self, being creative and having a valued contribution to an authentic performance, and beyond the sense of inclusion and empowerment, may impact on other quality of life improvements for people with Parkinson's disease. As Cohan (2006 p9) states, 'In the arts, the opportunities to create something new and beautiful are endless and offer an enormous sense of satisfaction and empowerment'.

## Reference List

- Aarsland D, Pålhagen S, Ballard C, Ehrt C & Svenningsson P (2012) "Depression in Parkinson disease— epidemiology, mechanisms and management" *Nature Reviews Neurology* 8 (1) pp. 35-47.
- Allen N, Canning C, Sherrington C et al. (2010) "The effects of an exercise program on fall risk factors in people with Parkinson's disease: a randomized controlled trial" *Movement Disorders* 25 (9) pp. 1217-1225.
- Allen N, Sherrington C, Suriyarachchi G, Paul S, Song J & Canning C (2012) "Exercise and motor training in people with Parkinson's Disease: a systematic review of participant characteristics, intervention delivery, retention rates, adherence, and adverse events in clinical trials. *Parkinson's Disease* 2012 pp. 1-15.
- APPG (2017) *Creative Health: The Arts for Health and Wellbeing: All-Party Parliamentary Group on Arts, Health and Wellbeing Inquiry Report* London: APPG
- Batson G (2010) "Feasibility of an intensive trial of modern dance for adults with Parkinson Disease" *Complementary Health Practice Review* 15, pp. 65–83.
- Burckhardt C & Anderson K (2003) "The Quality of Life Scale (QOLS): reliability, validity, and utilization" *Health and Quality of Life Outcomes* 1 (1) pp. 1-7.
- Cohen G (2006) "Research on creativity and aging: the positive impact of the arts on health and illness" *Generations* 30 (1) pp. 7-10.
- Crizzle A & Newhouse I (2006) "Is physical exercise beneficial for persons with Parkinson's Disease?" *Clinical Journal of Sport Medicine* 16 (5) pp. 422-425.
- Department of Health (2011) *National Service Framework for Older People*. London: DH
- Dibble L, Addison O & Papa E (2009) "The effects of exercise on balance in persons with Parkinson's disease: a systematic review across the disability spectrum" *Journal of Neurologic Physical Therapy* 33 (1) pp. 14–26.
- Earhart G (2009) "Dance as therapy for individuals with Parkinson Disease" *European Journal of Physical and Rehabilitation Medicine* 45 (2) pp. 231-238.
- English National Ballet (2015) Retrieved from: <https://www.youtube.com/watch?v=0UqtB6QU4AY> on 10/05/16.
- Fisher B, Wu A, Salem G, Song J, Lin C, Yip J, Cen C, Gordon J, Jakowec M & Petzinger G (2008) "The effect of exercise training in improving motor performance and corticomotor excitability in people with early Parkinson's disease" *Archives of Physical Medicine and Rehabilitation* 89 (7) pp. 1221–1229.
- Fitzpatrick R, Davey C, Buxton MJ, Jones DR (1998) "Evaluating patient-based outcome measures for use in clinical trials" *Health Technology Assessment* 2:1–74.

- Goodwin V, Richards S, Taylor R, Taylor A, & Campbell J (2008) "The effectiveness of exercise interventions for people with Parkinson's disease: a systematic review and meta-analysis" *Movement Disorders* 23 (5) pp. 631–640.
- Griffin H, Jahanshahi M, Quinn N & Rahman S (2008) "Quality of life in Parkinson's disease: the relative importance of the symptoms" *Movement Disorders* 23 (10) pp. 1428-1434.
- Hackney M & Earhart G (2010) "Effects of dance on balance and gait in severe Parkinson disease: a case study" *Disability and Rehabilitation* 32 (8) pp. 679-684.
- Heiberger L, Maurer C, Amtage F, Mendez-Balbuena I, Schulte, Mönning J & Reymond M (2011) "Impact of a weekly dance class on the functional mobility and on the quality of life of individuals with Parkinson's disease" *Frontiers of Ageing Neuroscience* 3 (14) pp. 1-15.
- Hernandez D & Rose D (2007) "Predicting which older adults will or will not fall using the Fullerton Advanced Balance Scale" *Archives of Physical Medicine and Rehabilitation* 89 pp. 2309– 2315.
- Houston S (2011) "The methodological challenges of research into dance for people with Parkinson's" *Dance Research: The Journal of the Society for Dance Research* 29 pp. 329–35.
- Houston S & McGill A (2011) *English National Ballet Dance for Parkinson's: An Investigative Study*. Report retrieved from: [http://www.ballet.org.uk/media/filer\\_public/2015/08/20/english\\_national\\_ballet\\_dance\\_for\\_parkinsons\\_an\\_investigative\\_study.pdf](http://www.ballet.org.uk/media/filer_public/2015/08/20/english_national_ballet_dance_for_parkinsons_an_investigative_study.pdf) on 06/04/2016.
- Houston S & McGill A (2013) "A mixed-methods study into ballet for people with Parkinson's" *Arts & Health* 5 (2) pp. 103-119.
- Houston S, McGill A, Lee R, Watkins K & Donald C (2015) *English National Ballet, Dance for Parkinson's: An Investigative Study 2: A report on a three-year mixed methods research study*. Report retrieved from: [http://www.ballet.org.uk/media/filer\\_public/2016/01/20/enb\\_research-report\\_final\\_2.pdf](http://www.ballet.org.uk/media/filer_public/2016/01/20/enb_research-report_final_2.pdf) on 06/04/2016.
- Ketharanathan T, Hanwella R, Weerasundera R & de Silva VA (2014) "Major depressive disorder in Parkinson's disease: a cross-sectional study from Sri Lanka" *BioMed Central Psychiatry* 14 (278) pp. 1-2. doi: 10.1186/s12888-014-0278-8.
- Keus S, Bloem B, Verbann D, Jonge P, Hofman M, Van Hilten B & Munneke M (2004) "Physiotherapy in Parkinson's disease: utilisation and patient satisfaction" *Journal of Neurology* 251 (6) pp. 680-687.
- Landau S, Harris V, Burn D, Hindle J, Hurt C, Samuel M, Wilson K & Brown R (2016) "Anxiety and anxious-depression in Parkinson's disease over a 4-year period: a latent transition analysis" *Psychological Medicine* 46 (3) pp. 657-667.
- Martinez-Martin P (2017) "What is quality of life and how do we measure it? Relevance to Parkinson's disease and movement disorders" *Movement Disorders* 32 (3) 382-392
- Olanow C, Stern M, Sethi K (2009) "The scientific and clinical basis for the treatment of Parkinson disease" *Neurology* 72 (21) pp. 1–136.
- Oliver M (1990) *The Politics of Disablement: A Sociological Approach*. Palgrave Macmillan, London.

- Pringsheim T, Jette N, Frolkis A & Steeves T (2014) "The prevalence of Parkinson's disease: a systematic review and meta-analysis" *Movement Disorders* 29 (13) pp. 1583 -1590.
- Rodin J (1986) "Aging and health: effect of the sense of control" *Science* 233 (4770) 1271-6
- Rodin J (1989) "Sense of control: potentials for intervention" *The ANNALS of the American Academy of Political & Social Science* 503 (1) 29-42
- Rose D, Lucchese N & Wiersma L (2006) "Development of a multidimensional balance scale for use with functionally independent older adults" *Archives of Physical Medical Rehabilitation* 87 pp. 1478-1485.
- Schrag A, Jahanshahi M & Quinn N (2000) "How does Parkinson's disease affect quality of life? A comparison with quality of life in the general population" *Movement Disorders* 15 (6) pp. 1112-8.
- Thomas H (2003) *The Body, Dance and Cultural Theory*. Palgrave Macmillan, London.
- Turner B (2000) "Medical Sociology" in *Regulating Bodies: Essays in Medical Sociology* 3<sup>rd</sup> ed. London: Routledge pp. 125-176.
- Westbrook B & McKibben H (1989) "Dance/movement therapy with groups of outpatients with Parkinson's disease" *American Journal of Dance Therapy* 11 (1) pp.27-38.
- Westheimer O (2008) "Why dance for Parkinson's disease" *Topics in Geriatric Rehabilitation* 24 (2) pp.127-140.
- Westheimer O, McRae C, Henchcliffe C, Fesharaki A, Glazman S, Ene H & Bodis-Wollner I (2015) "Dance for PD: a preliminary investigation of effects on motor function and quality of life among persons with Parkinson's disease (PD)" *Journal of Neural Transmission* 122 (9) pp. 1263-1270.