



Royal Conservatoire  
of Scotland

**SCOTTISH  
BALLET**

# *Elevate*©: Exploring the Impact of a Dance for Multiple Sclerosis Programme

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## Executive Summary

### Background

Elevate© is a dance for multiple sclerosis (MS) programme developed by Scottish Ballet, Scotland's national dance company, and forms a key part of SB Health<sup>1</sup>. The overall aim of Elevate© is to positively impact on the health and wellbeing of dancers involved.

### Aim

This investigative study centres on the 10-week pilot of this programme (involving two weekly classes taking place April-June 2019) and had the following dual aim:

- To explore the narrative, framework, and efficacy of the model of practice developed by the Company.
- To evaluate the impact of the programme on dancers, with an especial focus on balance, fatigue, and walking ability.

### Methods

A mixed methods approach drew on three measures—the Activities-Specific Balance Confidence (ABC) Scale, Fatigue Severity Scale (FSS), and 12-Item Multiple Sclerosis Walking Scale (MSWS-12)—together with semi-structured interviews and participant observation.

### Results

A statistically significant ( $p=0.02$ ) self-reported improvement (decrease) of fatigue was observed in the Tuesday AM class. Marked statistical trends indicating perceived improvements in balance (11% in the Wednesday PM class) and walking ability (14% in the Tuesday AM class) were observed. This quantitative data was synergised with data gained from interviews and observations.

Further analysis of the qualitative data foregrounds the specific elements that comprise the model of practice and evidence an approach that enables and supports dancer autonomy and awareness and progression of physical capabilities. Key elements of the model explored, which define its 'distinctiveness', include adoption of a particular energy flow and an especial focus on mindfulness and dance technique. Existing Dance Health expertise, and consultation and collaboration between Scottish Ballet and other sectors, and between practitioners and dancers, emerged as central to shaping the model developed.

### Conclusion

The Elevate© programme and specific model of practice developed positively impacts on the quality of life of dancers with MS, particularly through enhancing body confidence and awareness, and responds to individual and collective needs and desires in terms of the dance activity offered.

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<sup>1</sup> Other programmes include The Close, Dance for Parkinson's Scotland (2016-2021), run in partnership with Dance Base, Edinburgh, and Time to Dance (2017-2020), working with dancers living with dementia.

## 1. AIM AND CONTEXT

### 1.1. Aim of the Research

Scottish Ballet's Dance Health programme launched in 2013 with *The Close*, a flagship Engagement programme involving young people. In 2016 the Dance for Parkinson's Scotland (DfPS) programme run in partnership with Dance Base, Edinburgh, began. Since then, two further Dance Health programmes have been introduced, *Time to Dance*, a dance for dementia programme (since 2017) and *Elevate©* (2018-), the focus of the current study. Research and evaluation is embedded into SB Health<sup>2</sup> through partnerships with the Royal Conservatoire of Scotland (RCS), Queen Elizabeth Hospital, Glasgow, and Ninewells Hospital, Dundee. An international research partnership has also been formed to advance knowledge of dance for multiple sclerosis (MS) (discussed further in [Research and Development](#)). Understanding and expertise generated contributes both to the Company's own learning and the wider dance, health, and academic sectors.

As will be explored below, dance for MS has garnered relatively little research attention in contrast to the burgeoning literature considering the experience, impact, and practice of dance for people living with Parkinson's. Again, in contrast to the global movement that is dance for Parkinson's<sup>3</sup>, no established model of practice exists for working with people with MS. Thus, the research commissioned had a dual aim:

- To explore the narrative, framework, and efficacy of the model of practice developed by the Company.
- To evaluate the impact of the programme on dancers, with an especial focus on balance, fatigue, and walking ability.

### 1.2. Multiple Sclerosis

MS is a progressive, autoimmune-mediated disorder of the central nervous system (CNS). The immune system attacks the myelin sheath that surrounds and protects the nerves meaning that messages travelling along become slowed or disrupted. The majority of epidemiological studies note the preponderance of women to develop MS (Duquette et al., 1992; Stuifbergen et al., 2003) and MS is a leading cause of disability in young people.

MS is thought to be caused by a combination of genetic and environmental factors characterised by a lack of Vitamin D and a hypothesis referred to as the 'Viking Gene'. Canada, Scandinavian countries, and Scotland have higher prevalence rates. Prevalence in the north of Scotland is particularly high, with one study of northeast Scotland finding the level per 100,000 people in 2009 to be 229 in Aberdeen, 295 in Shetland and 402 in Orkney

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<sup>2</sup> The branded term for Scottish Ballet's Dance Health programmes.

<sup>3</sup> Where 'dance for Parkinson's' is cited throughout this report, this is in reference to the global movement rather than the founding programme and model, 'Dance for PD®.'

(Visser et al., 2012). The same study concluded that Orkney has the highest prevalence worldwide (Visser et al., 2012).

Neurological symptoms include affective dysfunction, ataxia, fatigue, cognitive dysfunction, muscle stiffness and spasms, pain, sensory symptoms, visual impairment and urinary/sexual dysfunction. Symptoms experienced impact on quality of life and the independence of everyday living. Progression of the condition is not linear. Three key types of MS have been identified (Scheidler et al., 2018): Relapsing remitting; primary progressing, and; secondary progressing. The former is the most common type characterised by cycles when symptoms progress or may lessen or disappear. The latter two types are defined, respectively, by deteriorating neurological function from the onset (primary progressing) or following a period of relapsing remitting.

While there is currently no cure for MS, pharmacological advances and certain therapies, such as exercise, constitute important tools in managing the symptoms of the condition. However, these symptoms make participation in physical activity difficult for those affected, which increases the tendency to live a more sedentary lifestyle, consequently heightening the risk of all-cause mortality (Mandelbaum et al., 2016).

### **1.3. Multiple Sclerosis and Dance**

Although medical advice previously warned against exercising, owing to the risk of exacerbating symptoms (Gallien et al., 2007), the potential for exercise to have a positive effect on symptoms of MS has long been increasingly advocated for within medical and academic fields. Existing studies advocate for aerobic exercise training with low to moderate intensity, resistance training, and flexibility exercises. Several physiotherapeutic interventions for MS have demonstrated small improvements in balance and walking performance outcomes (Langeskov-Christensen et al., 2015; Learmonth et al., 2016; Platta et al., 2016), and Pilates programmes have also shown to be an appropriate conditioning intervention (Guclu-Gunduza et al., 2014; Soysal Tomruk et al., 2016).

As concluded in the few relevant studies published, owing to its multifaceted physical, emotional, social, and kinaesthetic nature, and particular emphasis on skills such as balance, gait, and coordination, dance has the potential to positively impact on the health and wellbeing of people with MS.

However, in contrast to the more established body of work exploring the relationship between dance and the Parkinson's condition, studies focused on dance for MS are very limited (Mandelbaum et al., 2016). Reflecting the dance for Parkinson's narrative of research (which has since expanded to become more dance and dancer-centred), existing dance for MS studies focus on the effect of the activity on functional mobility through clinical measures. Research into dance as an 'emerging modality of intervention' (Scheidler et al., 2018) for people with MS is currently in its infancy.

With reference to four studies in existence, two interventions draw on ballet practice (Scheidler et al., 2017; 2018), one draws on salsa (Mandelbaum et al., 2016) and ‘free movement’ could characterise the practice drawn on in a fourth study (Salgado and de Paula Vasconcelos, 2010). Sample sizes in these four studies range from one (Salgado and de Paula Vasconcelos, 2010) to 10 participants (Scheidler et al., 2018). All report improvements in the particular symptoms focused on, notably balance, fatigue and gait, in accordance with some of the most prevalent symptoms of MS, and one study (Salgado and de Paula Vasconcelos, 2010) also reports on emotional factors and the personal experience of the participant of the MS. The period of intervention ranges from four weeks (Mandelbaum et al., 2016) to five months (Salgado and de Paula Vasconcelos, 2010).

Walking impairment is an especially prevalent symptom of MS, often impacting upon an individual’s quality of life and independence (Salgado and de Paula Vasconcelos, 2010; Scheidler et al., 2017). As a result, in order for an exercise intervention to be truly effective, Scheidler et al (2017) advocate for formulating a programme, which aims to improve agility and smoothness of movement, with goals to improve gait and coordinated functional movement. As such, programmes grounded in classical ballet technique have been found to have an especially positive impact, with recent studies suggesting a potential for mitigating ataxia in patients (the term used in the relevant paper) who exhibit mild-to-moderate symptoms (Scheidler et al., 2017, 2018).

It is important to consider variables that may affect or predict an individual’s adherence to a physical activity regime, as the benefits of engaging in exercise only remain effective if maintained. Of particular importance are the psychological aspects of adherence such as basic needs fulfilment. Engagement in dance has repeatedly shown facilitation of autonomy, competence and relatedness in both clinical and general populations (Goulimaris et al., 2014; Mandelbaum et al., 2016; Norfield and Nordin-Bates, 2012).

#### **1.4. Introducing Elevate©**

The overall aim of Elevate© is to positively impact on the wellbeing of dancers through, for example, enhancing balance, spatial awareness, mobility, social confidence, and freedom of movement and expression. The programme came into being following an offer of funding from The R S MacDonald, as part of the funder’s 40<sup>th</sup> Anniversary Celebration, to build on the confidence and expertise gained through Dance for Parkinson’s Scotland (DfPS) and design and lead a dance for MS programme.

Elevate© began as a ten-week dance for MS pilot programme, the focus of the current study, taking place at Scottish Ballet’s headquarters at Tramway, Glasgow. Two weekly classes, one on a Tuesday morning and the other on a Wednesday evening, took place across April-June 2019.

All of Scottish Ballet's Dance Health programmes share a certain ethos and set of values. Classes are dancer-centered and inspired by the repertoire and artistic vision of the Company. Classes take place with live music and incorporate a social time with refreshments provided. Dancers are invited to dress rehearsals and Company productions, with the aim being to feel a part of the greater Scottish Ballet community.

As with the Dance for Parkinson's Scotland (DfPS) programme, the Elevate© classes have a focus on repetition and frequency of movement, improvisation, and vocal work, and draw on verbal instruction, memory, imagery and narrative. Chairs are placed in staggered and concentric circles and both seated and standing sections are part of the class. Two practitioners are involved in leading the class and a dance support worker and volunteers are also present.

However, although the DfPS classes acted as an important starting point for Scottish Ballet's neurological Dance Health work, the Company and practitioners were aware of the need for the programme to respond to the particular needs of people with MS. The very specific model of practice developed is discussed further in [The Elevate© Model of Practice](#).

Key members of the Elevate© team include:

- Catherine Cassidy, Director of Engagement
- Lisa Sinclair, Dance Health Manager
- Tiffany Stott, Dance Health Coordinator
- Louise Hunter, (former) Dance Health Officer
- Hayley Earlam, Freelance Practitioner
- Miriam Douglas-Early, Freelance Practitioner
- Signy Jakobsdottir, Musician

## Research and Development

From the onset, collaboration, consultation and research activity has guided the development of the programme and model of practice developed. An extensive research and development period was informed by an international research partnership established with Georgetown University Arts and Humanities Program/MedStar Georgetown University Hospital, Washington D.C., and the University of Florida Center for Arts in Medicine. Key members of Scottish Ballet staff, and the lead researcher, visited Georgetown University in October 2018 to participate in the classes and share learning.

Following training provided by MS Revive (based in Govan, Glasgow) in autumn 2018, and the above research visit, creative co-labs were run in spring 2019 involving MS Revive, and relevant NHS professionals. Taster sessions and informal consultation took place with participants at the former organisation and previously, in autumn 2018, with participants at the Living Well with MS conference (MS Society Scotland).

## 2. SUMMARY OF METHODS

To reiterate, the aims of the research was to:

- Explore the narrative, framework, and efficacy of the model of practice developed by the Company
- Evaluate the impact of the programme on dancers, with an especial focus on balance, fatigue, and walking ability.

Data collection took place throughout the 10-week pilot through drawing on qualitative and quantitative methods.

As occurred with previous Dance Health research commissioned by the Company (Whiteside, 2017) the dancers involved in the programme were overwhelmingly supportive of the study taking place, and were keen to understand the potential impact of the dancing for people with multiple sclerosis (MS). The design of this research study was informed by the aims noted above, by the ‘real’ rather than experimental setting that is usual for intervention type studies, and conversation with colleagues at Georgetown University and the University of Florida (see [Research and Development](#)).

### 2.1. Quantitative Measures

Three standardised self-reported measures, the Fatigue Severity Scale (FSS), Activities-Specific Balance Confidence (ABC) scale, and 12-Item MS Walking Scale (MSWS-12) were used. These measures are relatively short in length and easy to complete and respond to some of the most prevalent symptoms of MS.

Measures were administered at baseline (wk1), midpoint (wk5), and endpoint (wk10). 10 dancers across the two classes completed the ABC and MSWS-12 measures at all three intervals, with nine of those 10 dancers also completing the FSS.

#### [Activities-Specific Balance Confidence Scale](#)

The Activities-Specific Balance Confidence (ABC) Scale is a 16-item self-report measure used to assess an individual’s confidence in performing a range of ambulatory activities without losing their balance or experiencing a feeling of unsteadiness (Powell and Myers, 1995). Here, this measure is used to determine if participation in Elevate© is associated with an increase in balance confidence.

When completing the ABC scale, individuals are presented with sixteen activities (e.g. “walk up or down stairs” or “get into or out of a car”) and asked to rate their self-confidence in completing each activity on a scale of 0 to 100. A score of zero represents complete lack of confidence, and a score of 100 represents total confidence. Scoring is undertaken through

calculating the average of an individual's responses to get their overall percentage confidence in their balance.

### Fatigue Severity Scale

The Fatigue Severity Scale (FSS) is a nine-item self-report measure used to evaluate the impact of fatigue on an individual's everyday life (Krupp et al., 1989). Here, this measure is used to determine if participation in Elevate© is associated with a reduction in fatigue.

When completing the FSS, individuals are presented with nine statements (e.g. "fatigue interferes with my physical functioning" and "my motivation is lower when I am fatigued") and are asked to circle a number from '1' to '7', with '1' indicating strong disagreement and '7' indicating strong agreement. The individual is asked to consider each statement based on how accurately it describes their experience over the past week. The FSS is scored by calculating the average of an individual's responses, with a 'healthy' individual typically presenting a mean score of 2.3, with a score higher than 4 being indicative of problematic fatigue. An individual with MS will typically score around 6.5. A trend of lower scores signify improvement in perception of the fatigue felt.

### 12-Item Multiple Sclerosis Walking Scale

The Multiple Sclerosis Walking Scale (MSWS-12) is a 12-item self-report measure of the impact MS symptoms have on an individual's ability to walk (Hobart et al, 2003). Here, this measure is used to determine if participation in Elevate© is associated with an improvement in self-perceived mobility.

When completing the MSWS-12 an individual is asked how their MS symptoms have affected their ability to carry out a number of physical activities (e.g. "ability to run" and "ability to climb up and down stairs") over the past two weeks. The items (version 1 of the measure) are scored from 1 to 5. Lower scores represent lesser limitation and higher scores represent extreme limitation, meaning that a trend of lower scores signifies improvement perceived.

## 2.2. Qualitative Methods

### Semi-structured Interviews

Semi-structured interviews undertaken by the lead researcher took place towards the end of the 10-week programme with eight dancers (four from each class) and with Tiffany Stott (Dance Health Coordinator) and Hayley Earlam (Freelance Practitioner). All of the dancers involved as interviewees had been participating since wk1 and had consistent attendance.

Semi-structured interviews allow rich detail and narrative to be gained that is personal to the interviewee and the approach constitutes a flexible model that enables new and significant topics and themes to arise. The interview framework focused on included, the

narrative of getting involved with the programme; initial motivation(s); prior expectations; perceived cultural, physical, and social effects; support provided; challenges experienced; relationship with dance; and, involvement with other MS specific activities.

All interviews were recorded and fully transcribed.

### Participant Observation

Participant observation (involving dancing with the class and socialising afterwards) ran parallel to the timeline adopted for the measures enabling detailed field notes relating to the model of practice evolving and the dancers' responses to this development to be recorded. Ethnographic interviews (directed conversations that take place in the field) took place throughout the data collection period. Participation observation allowed the lead researcher to also 'feel' the dancing being performed and to establish a greater trust and rapport with individuals involved in the research.

## 2.3. Ethics

The Ethics Committee of the Royal Conservatoire of Scotland (RCS) granted ethical approval and informed consent was given from all involved in the research. Pseudonyms are employed when drawing on the experiences and opinions of dancers. For ease of understanding, 'dancers' throughout the report refers to individuals with MS. Scottish Ballet staff and freelance practitioners are credited given their involvement in the programme in an expert capacity.

## 2.4. Analysis

### 2.4.1. Quantitative Data

Quantitative data were analysed using IBM Statistical Package for the Social Sciences (SPSS) Version 24 to determine systematic variation in data sets such as differences between groups and correlations between variables.

- Were there changes within the classes?
- Were there differences between the classes?

The study began with 12 dancers in the Tuesday AM class and 10 dancers in the Wednesday PM class. Due to mixed attendance patterns, there was variation in the number of dancers present for data collection at baseline, midpoint, and endpoint. Therefore, there were seven useable data pairs for the Tuesday AM class (six for the FSS measure), and six for the Wednesday PM class.

The smallness of the sample size, although significant in relation to existing research studies, limited the types of statistical tests that could be performed e.g. an independent samples or paired samples t-test to compare the means (average) of the data. The present study carried

out a Wilcoxon Signed Rank test in place of the paired samples t-test, and a Mann-Whitney U test in place of the independent samples t-test to compare the distribution of the data, rather than the means.

Statistical tests are frequently interpreted through a p-value. The p-value, or probability value, is essentially the percentage chance that the effect a researcher has observed can be attributed to chance. Within the social sciences a criterion p-value is set at .05. When a statistical test generates a p-value of less than .05 the result can be described as significant, meaning there is at least a 95% probability that the observed effect is systematic variation within or between groups. While it is somewhat less robust, when the result of a p-value is extremely close to .05, generally within the .06-.08 margin, it can be described as a trend and evidence of systematic variation.

Descriptive and inferential findings from these measures are presented in the next section.

#### **2.4.2 Interviews and Observation**

Qualitative data was analysed through the creation of a grounded coding frame (McCaslin and Scott, 2003). Inductive analysis ensures that key themes and patterns arise from the data. Triangulation of data, as presented in the next section, can lead to a more complete, and richer, understanding of the setting under investigation.

#### **2.5. Limitations**

A number of variables shaped the research undertaken and, thus, may have impacted upon results.

The 'pilot' nature of this programme meant that Scottish Ballet were exploring and developing the model of practice as the 10 weeks unfolded. The content was not 'uniform' each week and although the same three practitioners, Tiffany Stott, Hayley Earlam, and Miriam Douglas-Early, delivered all of the classes, different 'pairings' were involved in response to logistics and cover.

Although some discussion took place within the interviews, concerning dancers' individual symptoms and experiences of MS, there was no specific eligibility criteria for taking part in either the project or the research and further detail was not requested by the Company or lead researcher (aside from where specific health and safety concerns had to be met). It was also not known, for example, the varying types of medication that were involved and the individual timing of taking any medication. Dancers at varying stages of MS, with different types of the condition were part of the programme, meaning that it is difficult to ascertain if the dancing is particularly impactful for particular MS populations.

As highlighted previously, studies in this area are largely comprised of very small sample sizes, and are therefore restricted in terms of being able to implement randomisation or

controls when allocating groups. Concerning analysis of the data and any potential generalisation of findings, although significant within the context of existing dance for MS studies, as mentioned, the sample size involved limited the types of statistical tests that could be undertaken and the smallness of the sample means that results should be viewed as indicative rather than representative.

It should also be noted, as mentioned above, that the dancers involved demonstrated high levels of engagement and self-efficacy, potentially shaping their responses when completing the measures. Additionally, owing to logistics, the measures were completed before class on wk 1 and after class on wk 5 and 10, potentially affecting the accuracy of these results.

Lastly, it is our regret that the role and effect of live music does not have a distinct place in this study within the parameters set. This is an area of research that we feel certainly warrants greater attention in the future.

### 3. THE DANCERS

During the first week of classes, 23 dancers were present and all except one were female. A second male dancer with multiple sclerosis (MS) joined the Wednesday class part way through the programme. Many individuals entered with walking aids and two of the dancers used wheelchairs. The vast majority arrived on their own, although there were pairings across the two classes: two sisters, a mother and son, a husband and wife. Many were local to Glasgow and the surrounding area.

However, beyond this rather surface level description, *who* are the dancers that participated in this programme? What inspired them to sign up?

#### 3.1. The 'Right' Opportunity

Among the eight interviewees, at least three of the dancers had never attended an MS specific activity prior to participating in Elevate© and five of the dancers were diagnosed with MS more than 10 years ago (and we recognise that the condition may exist some time before diagnosis).

For Morag, there was the challenge of finding appropriate activities:

*Things that are directly related to MS are actually really far and few between... it's finding that connection of people who know what's going on and what's there.*

Another dancer who had been regularly attending an MS specific physical activity at a Sports Centre was told that, owing to the progression of the condition, the necessary support could no longer be provided. One dancer took two trains from central Scotland to come to the classes at Tramway. Further compounding the lack of opportunities felt is the understanding that the condition adversely affects a generation whose daily lives are often shaped by work and familial commitments and has a notable prevalence among women.

The interviewees conveyed a sense of needing and waiting for the 'right' opportunity to arise. In the case of Elevate©, it was the combination of an activity with dance at its core, specifically tailored for people with MS. Kate encapsulates the significance of this binary:

*It was because it was dance, because it was different, it wasn't mainstream. It's because it was MS so everyone knew who was involved, like yourself or the girls who are doing it. You know you didn't have to pretend, you didn't have to think, 'oh, I need to try and be better than I am to fit into the class.'*

This sense of a need to respond to the 'right' opportunity is supported by the speed and strength of uptake following announcement of the pilot (as shared by Tiffany Stott) and dancer adherence to the programme. Although attendance was mixed at different points, all dancers involved from wk1 of the classes were still participating at the end of the 10 weeks. Previous events run to inform the design of Elevate© (see [Research and Development](#)) were similarly well-attended and we understand this trend continues with

the subsequent development of the programme throughout 2019 and 2020 in Orkney, Perth and Dundee, and its continuation in Glasgow.

### 3.2. The Attraction of Dance

For the majority of the interviewees (six out of eight), the entity of dance was an absolute attraction. Lucy had attended dance classes as a child and is a committed fan and theatregoer of classical and contemporary dance works. Dance and drama had been an integral part of Morag's life until her relatively recent diagnosis of MS. For this 'sub-group' within the class, at least, there was a distinct and personal connection with the art form. For Morag, the connection with dance is personal and long-standing.

*It's a real sense of me, my identity.... I do kind of feel as if it's given me dance back into my life from what was there and that's a huge thing. I've been going in and telling people, 'I don't just like these class, I love these classes' because it's everything for me.*

The status of the Company leading the programme was a key attraction to more than one interviewee.

*As soon as I heard it was Scottish Ballet wanting to do something with MS, I had no thoughts of not doing it. It was just "I have to do it, I want to do it." It was an immediate response (Kate).*

An opportunity to mitigate the symptoms of MS, through dance, was also, unsurprisingly, a key motivator for the dancers to sign up. Deborah explains further:

*We thought, if we could just get something that would make us stronger. Make us a wee bit more supple, help us with our balance.... We're quite robotic sometimes and we wanted to try and maybe stop the robotic part.*

### 3.3. Tailored for Dancers with Multiple Sclerosis

Engaging with Elevate© was an opportunity to engage further with having MS within a supportive community.<sup>4</sup>

*You're going somewhere where you don't have to explain as much. Because I don't mind going in and saying 'this is what my symptoms are; this is what I find difficult', 'this is what I want to get out of it', but it's more just that when I'm saying that, I don't then have to explain what that actually means on top of having to have that initial explanation (Morag).*

John explained,

*If I wasn't here, I'd just be lying on a couch, wasting away, because you're not active.*

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<sup>4</sup> Although this study does not have an explicit focus on the potential social benefit of participation, within the interview and observation data, individual dancers do talk about the importance (for them) of building on and creating networks and friendships with other dancers with MS.

Lucy was,

*Sick of feeling [unhappy] about myself and so thought if I did something like this, it might help... It forces me to do something, rather than just staying in my jammies with my cat.*

This theme of 'doing something' continues with Phoebe who saw Elevate© as an opportunity to do something different:

*I went in thinking, I have absolutely no idea what I'm signing up for and that's kind of what I like. Just jump in, see what happens.*

Interestingly, for Sarah, one of the interviewees who had not attended any MS specific event previously, it was *who* would likely be attending, and *why*, that acted as a key motivator.

*I knew if I was going to do it, I was going to meet people with MS, coming to something like this who were like-minded. So you weren't going to be with people who didn't want to do anything about it because they were trying to improve themselves and get something out of it, so that's the main reason I came to it.*

## 4. PERCEIVED IMPACT ON BALANCE, FATIGUE, WALKING ABILITY

### 4.1. Balance

Developing an increased sense of balance was a key motivator for joining the class, interestingly more so than concerns with fatigue or walking ability. Anna explained:

*There are common symptoms we all share, there are common issues.... especially if you're in a wheelchair, your balance and posture is all over the place.*

Concerning the Activities-Specific Balance Confidence (ABC) scale, the Tuesday AM class did not demonstrate a change in their balance confidence over the course of the programme, with mean balance confidence at 52%<sup>5</sup> at baseline, 53% at midpoint, and 51% at endpoint. This finding contrasts with the Wednesday PM class, who did demonstrate an improvement of 11% (from baseline to endpoint) as the programme progressed, as demonstrated below:

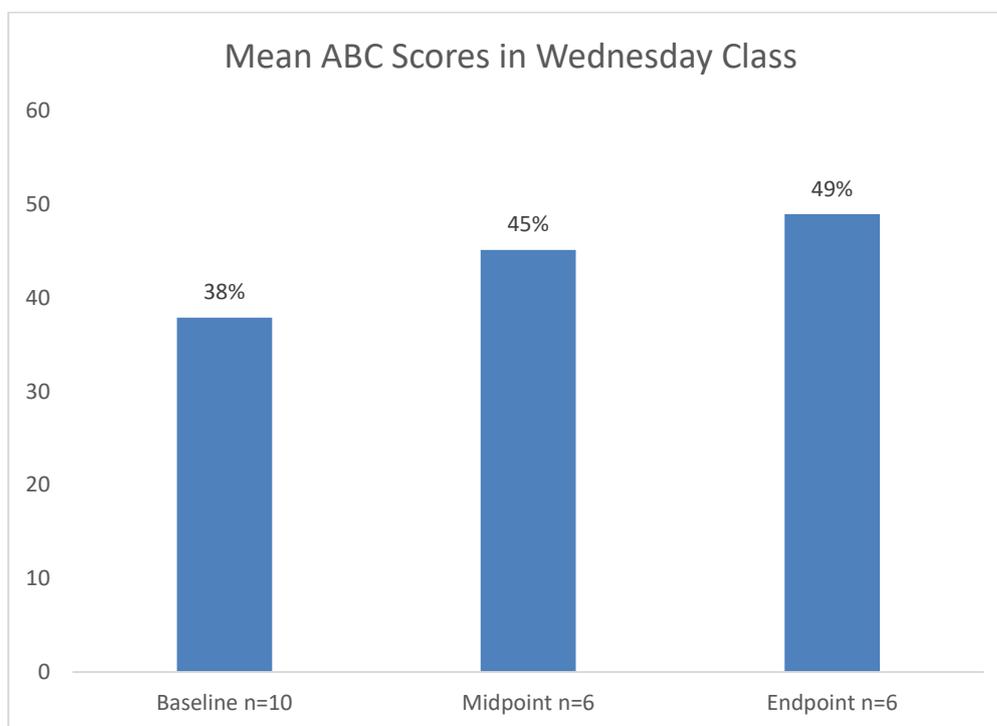


Figure 1: Mean ABC Scores in Wednesday Class

Moreover, a Wilcoxon Signed Rank Test comparing baseline and endpoint in the Wednesday class showed a marked trend ( $p=.07$ ) towards an improvement in perceived balance. A Mann-Whitney U test did not find any significant difference between balance confidence in the Tuesday AM class versus the Wednesday PM class at baseline, midpoint, or endpoint and percentage improvement in balance confidence did not significantly differ between classes.

<sup>5</sup> Owing to the smallness of the sample size, all percentages have been rounded to a whole number.

Within the class, exercises that particularly focused on balance included barre work, and progression was observed early on in the programme when the class moved from using the back of their chair to walking over and holding onto the barre. Within interviews, dancers shared their reaction to learning within the class.

One dancer explained how she used a certain position from the class to prevent herself from falling at home:

*When I fell, again in the same place during the week, this time instead of battering and bruising and injuring myself, I kept on my feet because I automatically did that backward, straight leg, and it kept me on my feet. It then let me reach forward and hold onto the sink, so I could get my balance back. And that for me, is everything (Anna).*

Another dancer shared her surprise at not falling through a sense of increased balance:

*I haven't fallen once, I haven't done anything like that, so, yes, I do feel that that is a surprise for me. It was a surprise that I was able to stand on my tiptoes, didn't think I'd be able to do that (Kate).*

#### 4.2. Fatigue

The dancers felt that balance, in particular, was a symptom that participating in a dance activity could positively impact on. Fatigue, in contrast, was perceived as a symptom that could affect participation.

*That's our biggest enemy. Fatigue is our biggest enemy (Anna).*

*One of the concerns that I had before was the actual fatigue. Because I didn't know what it was that we were going to be able to do, or what it was we were going to do, or how it was going to be structured (Morag).*

Within the interview data, a key theme is a belief that the benefits of participating outweigh any increased fatigue felt.

Sarah explains,

*I'm fatigued, but I feel great because I've done something to try and help myself so that gives me a good mental lift overall. You know that when you get there, the whole feeling of wellbeing is going to outweigh the fact that you're fatigued. You're going to something that you really enjoy.*

Lucy explains,

*Sometimes I can come in and I can just feel completely scunnered and I can leave thinking that wasn't too bad. I go home feeling a wee bit good.*

The concern with fatigue was understood by the Company in structuring the class and led to the adoption of a particular energy flow (see [The Elevate© Model of Practice](#)). Practitioners would also sense the atmosphere and responses of the dancers in the room:

*We paused in the middle of the seated tendu exercise and everyone hugged themselves – we wrapped our arms our middles and shoulders tightly and sunk into the embrace. Hayley [Earlam] mentioned afterwards that she noticed that people were getting tired and wanted to respond. Settling into the back of our chair broke up the repetition of the movement for a moment (Field notes).*

Additionally, practitioners were aware of how long it could take the dancers to reach the studio and the fatigue that may be experienced in reaching that space.

The largest perceived improvement suggested by the measures was the reduction in fatigue levels in the Tuesday AM class. As demonstrated by the graph below, fatigue levels drop at the midpoint mark, with the effect still holding at endpoint. A Wilcoxon Signed Rank Test found a statistically significant reduction in fatigue levels between baseline and endpoint in the Tuesday class ( $p=.02$ ).

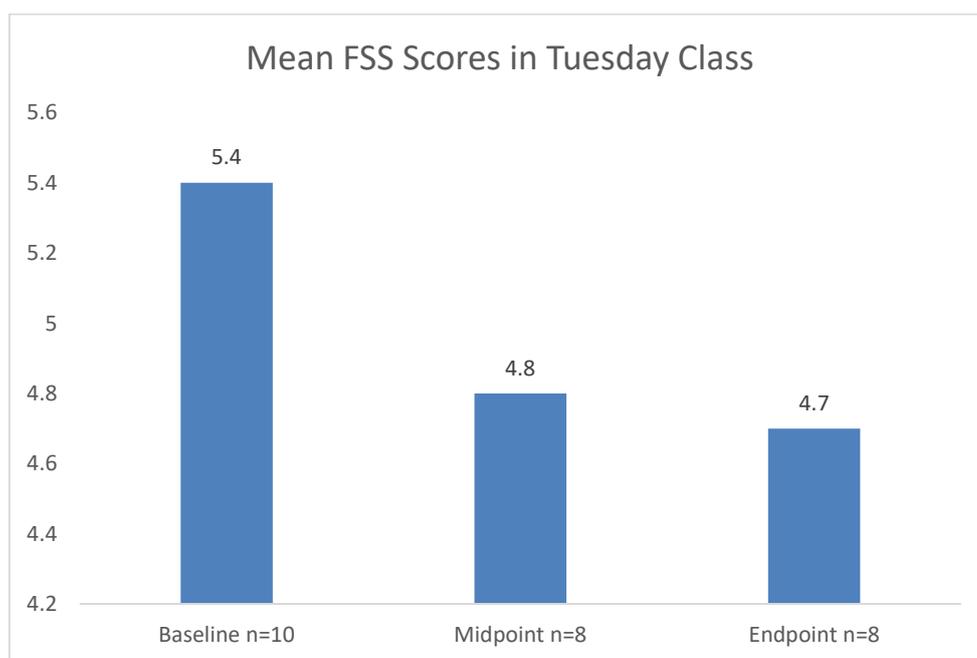


Figure 2: Mean FSS Scores in Tuesday Class

While it did not reach statistical significance ( $p=0.6$ ), the following graph demonstrates a slight reduction in mean fatigue scores in the Wednesday PM class across the course of the programme, specifically between baseline and midpoint.

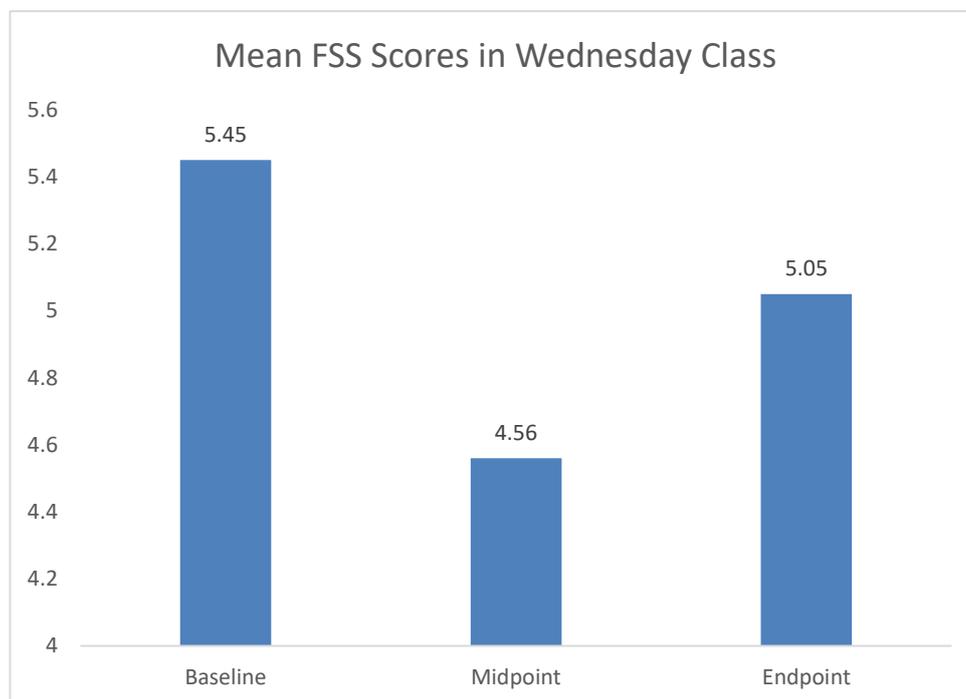


Figure 3: FSS Scores in Wednesday Class

A Mann-Whitney U test did not find any significant difference in fatigue levels for the Tuesday AM class versus the Wednesday PM class at baseline, midpoint, or endpoint. It did, however, find a significant difference in percentage improvement across the course of the programme ( $p=.03$ ), supporting the aforementioned finding that fatigue was significantly reduced in the Tuesday AM class, but not in the Wednesday PM class. One possible hypothesis concerns the differing times of the day. The evening start time on the Wednesday may have impacted, to a greater degree, upon dancers' fatigue levels.

It is also important to note that people with multiple sclerosis (MS) typically self-report 6.5 and above. Although the average score for two of the dancers exceeded 6.5 at the baseline, the mean average for all dancers at mid and end point (including the aforementioned dancers) was below this figure, suggesting that fatigue is experienced less as a symptom within this group (impacting, perhaps, on their ability and interest in attending the class).

One dancer also explains how they feel supported to manage their fatigue within the studio.

*It feels as if there's been a lot of care and a lot of thought into looking into and taking account of people's abilities.... You aren't made to feel excluded if you're not able to do something. So, for example, if I ever at any point thought, 'I just need to keep sitting down', I feel that that's ok (Morag).*

The same dancer shared their perception that the fatigue felt was *different*:

*I am obviously tired by the time that I get home but it doesn't feel draining for what it is. It's still, it's that kind of, when you have been exercising (Morag).*

One key aspect of the model, explored further in **Importance of Progression** is that of moving forward, and a link is made from interviews and field notes between an increase in cognitive and physical resilience and stamina and a decrease in fatigue. Certainly this symptom of MS, in terms of effects perceived, is more strongly articulated through the measures and the qualitative data.

*In the beginning, I remember thinking if only this [salsa section] was at the beginning of the class when I was less tired, when my brain was less tired, and when my body was less tired, I'd be able to do this much better. Please put this at the beginning because I want to be really good at that but now, it's always near the end, so I see a difference each week. I've got a bit more stamina, I've got a bit more, 'oh, I know I can move forward, and I can move to the side' (Kate).*

### 4.3. Walking Ability

Dance for MS studies emphasise the potential impact of decreased walking ability on an individual's quality of life (Salgado and de Paula Vasconcelos, 2010; Scheidler et al., 2017). Anna shared that for her, personally,

*I think that [decreased walking ability] was kind of the hardest thing I've found about it.*

Within this class, as mentioned, many of the dancers attended using a walking aid or wheelchair.

The Tuesday AM class showed a distinct reduction in MSWS-12 scores across the course of the programme, as demonstrated by the graph below, suggesting perceived improvement (14%) in walking ability. A Wilcoxon Signed Rank test additionally found a substantial trend ( $p=.06$ ) towards an improvement in self-perceived mobility between baseline and endpoint.

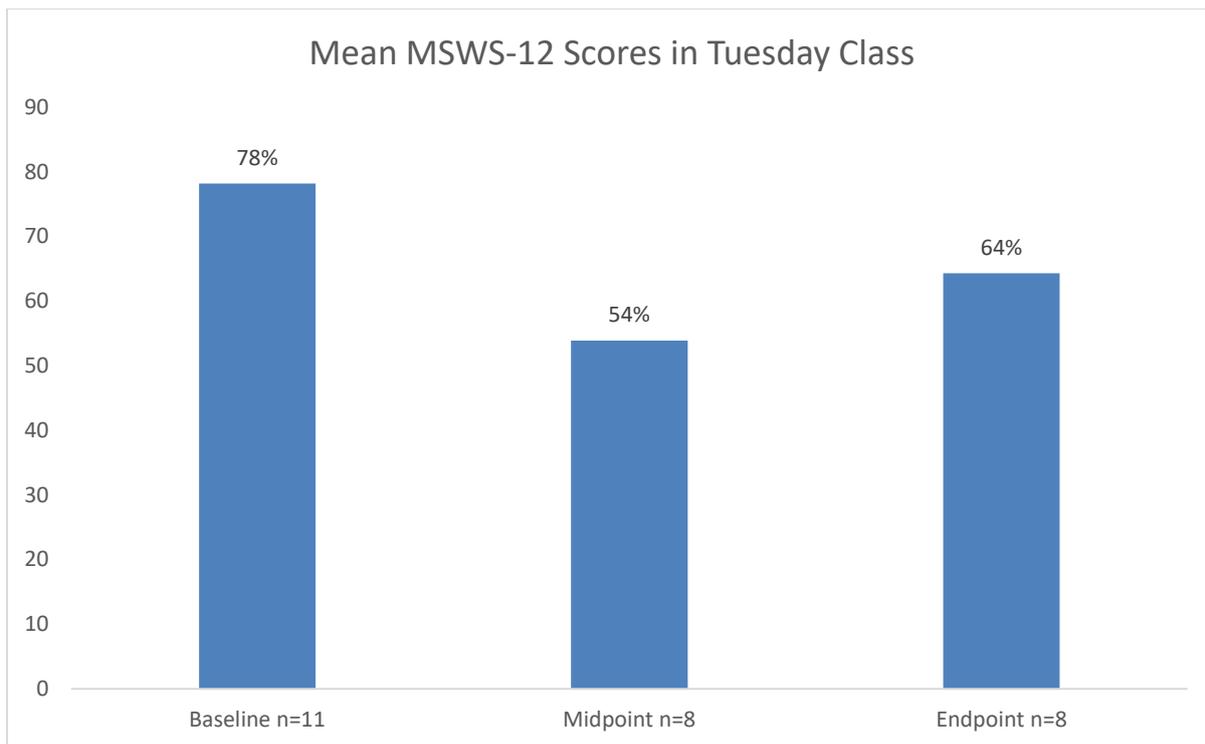


Figure 4: Mean MSWS-12 Scores in Tuesday Class

The Wednesday PM class did not demonstrate a significant self-reported improvement in walking ability, although mean scores did improve slightly (5%) as the programme progressed. The result was not statistically significant.

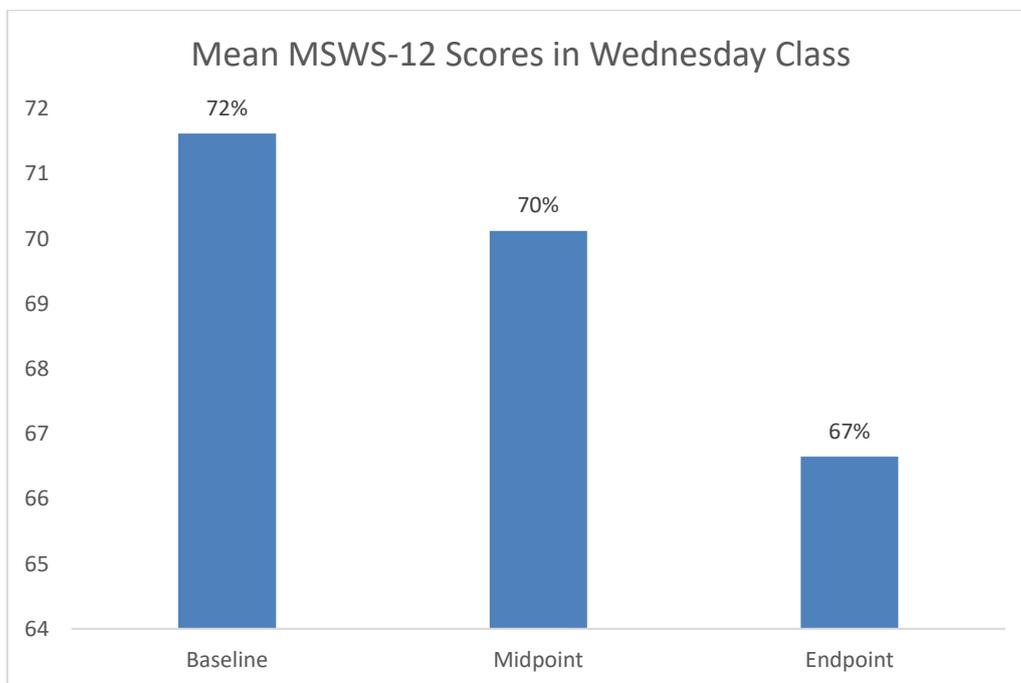


Figure 5: Mean MSWS-12 Scores in Wednesday Class

A Mann-Whitney U test did not find any significant difference in MSWS-12 scores in the Tuesday AM class versus the Wednesday PM class at baseline, midpoint, or endpoint. Percentage improvement in self-perceived mobility did not significantly differ between classes.

As with 'balance', interviewees generally were less sure how their gait and mobility may have been impacted upon through participation. One dancer, however, shared the effect felt:

*Once a class finishes, it's almost, you know the way you feel when you go for a massage, and you come out and everything's just kind of like 'ooooh'. Well, when I come out of this, my legs are like spaghetti. It's not like a fall down but it's almost as if you've just released all the tension that's from your body, that your body's just kind of going 'ahhhh' and you're kind of going 'oooh, my legs are feeling like somebody else's legs.' They're waving a wee bit as I'm walking off. But that's fine because all the tension's kind of drained out of you (Morag).*

#### 4.4. Summary

The descriptive statistics, as well as the results of the statistical tests, suggest that Elevate© has had some positive effect on how dancers with MS self-reported symptoms with relation to balance, fatigue, and walking ability.

A statistically significant reduction in fatigue was observed in the Tuesday AM class, as well as marked trends indicating improvements in balance in the Wednesday PM class and walking ability in the Tuesday AM class. While some of the findings are subtle, only perceived improvements or no change in perception of symptoms were observed. We note the potential limitations of a 10-week programme, and the possible additional impact of some individual mixed attendance patterns, in limiting the exposure of dancers to the activity and thus, the opportunity to increase strength, stamina, proprioception etc., to impact on particular MS symptoms.

Some interviewees spoke of the difficulty in quantifying potential effects on symptoms; others explained that they didn't feel a particular symptom acutely and, thus, felt that impact is harder to ascertain. However, within the qualitative data, there are distinct examples and instances of how participation in the class was potentially positively effecting perceptions of balance and walking ability, with a discernible trend concerning the positive impact on fatigue. This latter element of study is explored further in [Body Confidence and Awareness](#).

## 5. THE ELEVATE© MODEL OF PRACTICE

### 5.1. Elements and Essence

#### The Settle and Sun Salutation

As mentioned previously, the Dance for Parkinson's Scotland (DfPS) model acted as an important starting point for developing a model specifically for working with dancers with multiple sclerosis (MS). Key aspects of that model – the Settle and Sun Salutation<sup>6</sup> – are also integral to the Elevate© model. Tiffany Stott explains further:

*We always start with quite a long Settle, just to get everyone into the space, but that's always done with huge amounts of imagery and imagination, whether it's going through a forest or on the beach, and the feedback we got instantly was just absolutely loving that. Loving that escapism! Tapping into that imagination!*

In contrast to the DfPS model, the Settle takes on increased importance in the Elevate© classes owing, in part, to recognition of the fatigue felt in reaching the studio. Dancers in the class appreciate the time and space given for this moment of stillness and engagement with the body.

*When it's described to you, 'you're at the side of a rockpool, you're dipping into the rockpool, you're presenting your shell', it all makes sense. I enjoyed that. Tiffany's very relaxing. She's got a very calming voice and you just kind of drift away. Thinking about other things. All distraction, all good (Phoebe).*

Mindfulness is a central and powerful theme within the Elevate© classes and its impact is particularly felt during the Settle. The Sun Salutation further connects breath with movement and promotes stretch, expansion of movement and spine mobility.

*Close your eyes, concentrate, start the class like that, it's perfect. Because you're tuned into your body and then you can take on board what to do (Sarah).*

*It gives you a chance to think 'ok, that's been a bit sore, I'm going to relax, I'm going to stretch that out.' It's just like a warm up. And it's a lovely way to do it. It's very, it's like meditation in a way (Sarah).*

#### Energy Flow

As mentioned previously, the practitioners were especially aware of the need to manage levels of fatigue and the temperature within the studio, reflected in the adoption and development of a particular energy flow within the class.

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<sup>6</sup> The Settle and Sun Salutation are key components of the Dance for PD® model founded, in 2001, as a partnership between the Mark Morris Dance Group and the Brooklyn Parkinson's Group.

*If you take energy and fatigue, it's about the actual energy structure of the class, making sure that we didn't put two or three high energy sequences back to back. We would intersperse something, so for example, the barre work which is quite high energy, lots of standing, raised temperature, was followed by something seated. We dispersed seating to standing, back to seated, back to standing and also with something that was more cognitively challenging. With regards to the structuring, it's more about how the energy is actually flown throughout the actual class (Tiffany Stott).*

Whereas, within the dance for Parkinson's model, there are separate exercises for upper and lower body, within Elevate©, combinations of movements are drawn together to mitigate against tiring out one part of the body too quickly. However, as the programme progressed, separate exercises were introduced once the capabilities and needs of the class groups were better understood and body confidence and awareness (discussed further in a section of the same name) had increased.

Similarly, within the DfPS model, seated exercises are separate to, and progress on to, standing exercises. Within Elevate©, the structure established involves the class moving from the barre (standing) back to seated. As well as mitigating against fatigue, Hayley Earlam explains that,

*We took the lower body phrase after the barre work, as a chance to refine those moments that we do at the barre, for example, if we need to do more work on core strength.*

Linked to the move away from separate exercises to facilitate upper and lower body movement, is the inclusion of more combinations of movement. These combinations are designed to target key physiological concerns – to focus on alignment, develop the core, activate certain muscles, and the hip flexors, for example. As well as the physiological challenge, drawing on combinations of movement challenges the dancers cognitively. Certainly, this element is where the challenge was felt more keenly.

*I have difficult coordinating arms and legs so if there are moves using both my arms and legs, it takes me ages, it feels like I'm patting my head and rubbing my stomach (Phoebe).*

With reference to body coordination, Deborah explained:

*We have to second guess how that's going to work.*

However, the challenge was recognised as important one by some dancers:

*The ability to move from one thing to another... I think all that's really important because you lose all that with MS. There's certain things that come, that you get a bit fixated on, or you get a bit stuck. Just that ability to move from one thing to another. So you do lose that, but having these different things throughout the class enables you to keep firing (Kate).*

*The combination of movements. It's like waves and claps and clicks and flicks, these are really, really good for us because that's a challenge for us cognitively. Any kind of combination (Anna).*

The link between experiencing this challenge and feeling a sense of achievement is discussed further below ([Importance of Progression](#)).

### Dance as Expression

As explored in [The Attraction of Dance](#), for the majority of interviewees, the opportunity to access the very intimate and expressive nature of dance was a key impetus for joining Elevate© initially. The enjoyment and escapism felt through accessing this sense of freedom is best explained in the dancers' own words:

*You're free of expectations, free of the limitations that have been put on myself, free of thinking about 'oh well, I've got this to do, I've got that to do.' Freedom from just thinking about your symptoms and going 'oh god, this is just an absolute nightmare'... I'm a storyteller, so I can imagine myself in the forest, or at the beach, and when we're doing the salsa, I feel as if that's what I am doing. That actually I am a salsa dancer, that's who I am (Morag).*

*It really, really is great. I tell everybody I love it and it totally lifts you and you feel 'I can do this.' It's lovely. I feel lighter when I'm doing it. I might not look lighter but inside me, I feel as if though 'I can do that' (Deborah).*

*When you feel the heat and it is heat that comes into your body... you're smiling, you're feeling warmer. And I think when you see each other and we're passing and you're smiling, I love that part when you're just doing the dancing with each other and that's lovely (Deborah).*

One dancer explained how, although she struggled with embracing the more improvisatory and expressive elements of the class, benefit lay in stepping outside of one's comfort zone:

*The experiential side is probably the side I get embarrassed about, so I don't mind following someone and if they're doing this, I'll do that, but when you're told to do your own pointing or your own style of circle, and it's like 'oh, man.' But I wouldn't have it any other way. To feel your humanness amongst the... That's what you're learning. You're learning to be ok with that (Kate).*

One such improvisatory exercise was recorded through field notes:

*Towards the end of the class (after the salsa section), we worked in partners and performed a mirroring exercise. I was with Morag and, using just the one hand, I mirrored her, palms touching, as she directed the movement of both of us. Sometimes it was just fingertips touching; sometimes I could feel her fingers sort of cradling mine. We both had our eyes closed, and Miriam [Douglas-Early] was directing the class to also being in other parts of the body, to connect with the movement led by the palms and arms – neck, shoulders, back, feet, legs. For people with their eyes closed, she came over and gently tapped on the shoulder*

*so we could open their eyes for a moment and see the 'beautiful movements that everyone else is creating.' It felt quite special to do.*

## Dance as Technique

A final linked theme presented here is the enhanced focus, within the Elevate© classes, on dance technique. Both ballet and contemporary, for example, Graham, technique were taught. The codified lexicon of the former was drawn upon with instruction including the vocabulary of plié, tendu, chassé.

*You do actually feel that you are actually doing ballet.... you want to be able to say 'yeah, I do know some of the moves' and you do know some of the steps (Sarah).*

The barre, as a core symbol of ballet pedagogy, was a special place of attraction. Interestingly, using the barre was discerned by one interviewee as evidence of the class' increased capability:

*We were all like 'ahhhh, the barre, oh my God.' It's just holding onto a bit of wood but you're just so like 'oh my gosh, am I really going to do this?' Which meant we had moved from starting up and then it meant we got to stand at the barre. So that was lovely. That was a reward actually for every single one of us. We've all said 'how did you get on when we did that?' 'Yeah, it was great, great' (Deborah).*

## 5.2. Importance of Progression

### Scaffolding Approach

Scaffolding learning theory is reflected in the Elevate© model and this approach of building on and responding to existing knowledge was recognised during interviews with the dancers.

*We'll go over the same things and adding a little extra, adding a little extra. Everybody has more confidence in what they're doing and are standing up to do it (Sarah).*

*We really like the fact that we are getting challenged more and so each week we're just increasing what it is that we're able to do (Morag).*

Tiffany Stott explains how one core sequence, a salsa one, progressed steadily:

*If we take the salsa that we had from day one, we started it as seated task for a couple of weeks where we learnt the choreography; they understood all the technique behind it. We then transitioned it to be at the barre, and then we*

*developed it into a partner task, so they do it with a partner into a creative task, into a mindfulness task. Which is quite a journey.*

### Sense of Achievement

The impact of a scaffolding approach is keenly felt by the dancers and both enables and manifests as a sense of physical achievement felt and challenge met. Some of the dancers explained the importance of *feeling* that challenge:

*If I'm not challenged, I'll go in a slump, you know, and it's not the best place to be. It's sort of who I am, I think, that I need that and want that. Just something to always aspire to and that sense of achievement (Kate).*

*I want to get the most out of my body, I suppose. I want to push back (Sarah).*

Crucially, the dancers appreciated that the practitioners *recognised* the capability of the class to progress (however that may mean for the individual):

*My expectations have been exceeded from the fact that [they're] not assuming we're a room of MS Warriors<sup>7</sup>, who can't do very much, this actually challenges us, to actually move our bodies (Anna).*

*They have expectations of us because they believe that we can do other things and we can improve (Deborah).*

*Their expectations of us are actually increasing but not in an unrealistic fashion (Morag).*

### Sense of Surprise

Linked to the above theme is the sense of surprise expressed by some dancers, in relation to exploring capabilities and feeling a sense of progression. Significantly, perceptions of the dancers interviewed do not necessarily relate to an actual or discernible increase in functional mobility felt (although some of the quotes shared in **Perceived Impact on Balance, Fatigue, Walking Ability** do suggest this) but rather to an increase in body confidence and awareness (discussed further in the next section).

*I was amazed that I was standing there and stretching my arms to go way under, moving round about, rather than feeling I was going to fall off a chair, I'm actually feeling and moving into the empty space.... I haven't fallen once, I haven't done anything like that (Deborah).*

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<sup>7</sup> The term 'MS Warriors' is used by some within the MS community to reflect the resilience and strength drawn upon and developed by individuals in managing the condition.

### 5.3. Offering a Toolkit

#### Body Confidence and Awareness

The Elevate© programme aims to build body confidence, awareness, strength and stamina through enabling dancer autonomy.

Some examples, shared in interviews or observed in class, are significant for their very practical and micro nature. For example, learning how to rotate back into the chair in preparation for standing up. How to push into the floor when performing a chassé, to better engage the floor with the weight of the body and so gain that stability. To move through the heel of the foot to increase the body's balance when walking forward.

*That's probably the thing I'm getting the most out of it. It's the confidence, and feeling stronger (Sarah).*

*You're going 'oh, I didn't realise my balance was quite that kind of "off", because you've learnt to compensate for it as you're going and you don't realise (Deborah).*

Some dancers also shared the constant and delicate balance between exploring and advancing the limits of one's body and ensuring that this does not result in adverse consequences.

*I'm finding, I can be a bit more flexible than I think I can be and maybe I should just push my body a bit further than what I'm doing. But at the same time, with MS, it's quite scary to do that because I push my body too hard in a lot of ways.... there's always that fear that my legs are giving (Lucy).*

*During the class, in my head just now, I've got almost, without being so exact about it, a certain percentage I guess. So it's almost like saying, during the class, if we're doing things that require both arms, I'm kind of going 'ok, I could maybe do, just now, about five minutes of that.' So for me, it's kind of choosing, 'what's my five minutes that I'm going to use it'? (Morag).*

*I think for me, it's been about trying to learn how much I can actually do and it's not always so much about what I can do at the time; it's about the impact it has afterwards. So the first time that I came in, actually I was able to physically do more with my right arm than I thought but then, afterwards, the pain was really bad. It's almost about having to balance these two things for what is there (Morag).*

#### Self-correcting and Practising

Within the classes there were also numerous examples of observing the dancers self-correcting.

*They've built up that awareness and confidence in their body, that they can do that [e.g. correct posture] without prompting (Hayley Earlam).*

However, a key aim of Elevate© is to offer tools and strategies that dancers can draw on *outside* of the studio to support their daily living. Tiffany Stott explains:

*You've got to build up confidence gently... actually building awareness outside of the space. Building that into everyday life, thinking about your posture, how are you standing? Giving [the dancers] a toolkit and that common language that we always use about threads, spine, all those little things that can be taken outside of this. I think it's really key that we instil that.*

Several dancers spoke about how they are practising certain steps and sequences at home. For some, this is linked to development of an individualised toolkit; for others, practising is important for 'getting better' at dancing and the sequences performed in class.

*If I can't do it, the only way I can do it, is if I practice it (Phoebe).*

*The practice... I was doing it because I'm wanting to get that it starts to become, not second nature, but it becomes more... that your body starts going 'oh, that's what I do', you know, I move that way (Deborah).*

*And that foot, although I can't feel it, I have actually found myself putting my heel down more, which is good, because I should. That's something I get a row for and my consultant has said, that from a balance point of view, I need to try (Anna).*

One dancer shared how practising at home has become an activity that she shares with her daughter:

*I said to my daughter 'you've got to help me; I've got to remember this poem.' So you're technically taking it home, you know. And I don't go in and tell them, 'right, I was on the treadmill and I did that for 5 minutes.' I don't tell them that. I tell them about this.*

In terms of self-correcting, dancers interviewed most often linked this conscious decision to correcting one's posture:

*You know when she [Tiffany Stott] talks about your sit bones, I'm finding I'm doing it when I'm driving. 'Sit up, don't slouch over the steering wheel!' (Deborah).*

#### **5.4. Consultation and Collaboration**

As we have seen, themes of consultation and collaboration were central to the development of the Elevate© model with the forming of an international research partnership and the running of taster sessions and creative co-labs all contributing to key learning. This approach did not end with the onset of the programme; ongoing

conversations with the dancers was an embedded feature to better understand opinions felt and the experience had.

### An Exchange of Feedback

An exchange of feedback with dancers in the class began with the running of tasters at MS Revive.

*They had a chat with us and wanted to know what we would like. What would a class look like? What would we take from it? And then we got all excited (Deborah).*

The benefit of the lengthy research and development period employed by the Company is encapsulated in the following conversation recounted:

*One of the dancers did tell us “it’s like you’ve thought of every single thing that we could possibly need but it is still a dance class, without a doubt.” That’s been really good affirmation (Tiffany Stott).*

As has already been noted, for several dancers involved, the opportunity to dance was a key attraction for joining the programme. As some dancers explained, there also existed a need to maintain a balance between pushing the body and exacerbating symptoms; a balance that practitioners strived to reflect in the content and structure of the class. However, as confidence and understanding developed, more complex combinations of movements, more varied content, and use of the barre, were introduced:

*I think after the first couple of weeks, we had said to them, that we would quite like to be doing more things that felt as if it was more like dance (Morag).*

Similarly, within the class, feedback was given to the dancers as would naturally occur within any pedagogical environment:

*She [Miriam Douglas-Early] came up to me and she said ‘what you’re trying to do, is bend down further’ [in relation to performing a chassé], so she came to me. The girls are watching what you’re doing, without making you feel you are getting watched and making a mistake. She didn’t make me feel like that, she was just saying ‘you might want to try this’. And that was good because she wasn’t saying ‘oh for goodness sake, do it that way, or you’re going to fall.’ She said, ‘this will make it easier for you’ (Deborah).*

### Establishing Trust

Despite the centrality of dance as a key motivator for joining the programme, some interviewees conveyed a sense of their needing to be brave when first joining the class. Deborah explained that at the taster at MS Revive, she had exclaimed,

*Oh my balance is so bad, I’m not going to do it. I’m going to look silly.*

*I was absolutely terrified the first time that I came (Lucy).*

*I didn't know what to think of it, what it was going to be (John).*

For some dancers, concern felt was linked to participating in a dance activity for the first time; for others, it was an awareness of the effort required to attend; or a worry that they wouldn't be able to do as much as they would like and, thus, that dancing would lead to heightened anxiety and increased symptoms. Some individuals actually undertook a 'recce' before attending, to check out the parking facilities and mark out lift access and the walk within Tramway to Scottish Ballet's studios.

The practitioners spoke of how these shared concerns shaped the initial design and subsequent development of the model. Certain elements, such as there always being one practitioner remaining seated during standing exercises migrated easily from the DfPS model.

*Reiterating that people can only do what they can do. If they need to sit down, then they need to sit down, and then they join in when they can (Anna).*

Dancers are also supported to move at their own pace:

*That's what we love as well. We were saying, it's the whole being patient with us, being patient and letting us think at our own pace It's just brilliant. She's brilliant. She's great [Tiffany] (Anna).*

More than one interviewee shared how they were developing their own individual response to dancing within the class, a strategy as it were, reflecting the trust placed in them:

*It's "I can't do that, ok, what can I do now?" Or "what can I follow next?" (Anna).*

In some instances, the strategy in question involved a dancer and a practitioner developing together a way of working:

*During the ballet barre section, Mary began with a chair placed in front of her, but this quickly changed to working with Louise [Hunter] who was holding her arms and standing in front of her 'being' the barre. They were smiling at each other a lot, and Louise was talking to her very quietly. Rises and tendus were difficult for Mary to perform, so Louise was leading an alternative movement – for a rise to demi pointe, they were looking up to the ceiling. At other times, they were lifting shoulders (for side port de bras) and very gently twisting and moving arms back and forth, and bending gently. Louise had her back to Miriam [Douglas-Early] and was using the mirrors and verbal instruction to follow the class (Field notes).*

## 6. CONCLUSION

*I've been telling people and they can hear the excitement in my voice and they're like 'wow! You're back at dancing.' And I'm like 'yeah, yeah. I'm doing this class, called Elevate, and it's fab.' And it is that being excited, because I can't remember the last time that I was this excited about something (Anna).*

Within this investigative study, Elevate© has been characterised as the 'right' opportunity by the dancers owing to its positioning as a dance activity tailored for people with multiple sclerosis (MS). This is a model that has benefited from Scottish Ballet's pre-existing Dance Health expertise, and extensive and ongoing research and development. Interviewees either had a strong pre-existing relationship with the art form or a curiosity to engage with it. The name of 'Scottish Ballet' was, for some, an added core attraction. Support for the programme is further evidenced through the initial uptake, high adherence to this 10-week pilot programme, and subsequent interest in classes run or planned in Orkney, Dundee, and Perth. This evident response was more keenly felt within a context of limited opportunities (as shared by dancers) and noting the ratio who had not previously engaged in any, or were not currently engaged in, other MS specific activities.

Within the limitations of a 10-week programme, the quantitative measures and qualitative data analysed do suggest some positive effect of the programme on balance, walking ability, and fatigue as perceived by the dancers involved. The latter symptom has emerged both as a particular concern in reflecting a constant balance with the cognitive and physical experience had or desired in class and an area where perceived positive effect is more evident. The model adopts a particular energy flow, which facilitates a greater combination of movements (through separation of the upper and lower body exercises). A cyclical approach is discernible whereby complexity slowly increases, through a scaffolding approach, in response to observing the dancers in class and responding to their feedback. A sense of achievement and progression is thus shared meeting the need of some dancers to feel challenged. Other key components of the Elevate© model include the centrality of mindfulness and dance technique. Also significant, is the perceived impact of the class on increasing body confidence and awareness and the development of dancer autonomy and individual approaches and strategies to mitigate against the symptoms of MS. Dancers are supported to further understand their own capabilities. Enjoyment of dance and a desire to progress coupled with expert feedback given in class leads dancers to choose to self-correct and practise within and outwith the studio, thus increasing the potential impact of the programme further.

In light of these findings and recognising the limited body of research in existence, we argue for further studies in this area and the opportunity to work further with the dancers who are best placed to explain, and share, their perceptions of engaging with the art form and the potential effect experienced.

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