

RELATIONSHIPS BETWEEN DANCE, HEALTH AND AESTHETIC PERFORMANCE IN A COMPANY OF MATURE DANCERS: AN EXPLORATORY STUDY

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Stella Eldon MA trained at Laban and worked as a dancer into her late twenties. She then retrained as a visual artist with a practice that is site-specific and socially engaged. Self-reflection in recent years revealed that she uses many different media in her work but strangely never her body or dance. And so began a journey back to dance, which led to her joining EncoreEast, a performance company of mature dancers based in the East of England, and the undertaking of a Masters at Middlesex University. Her research explores age and dance, and how it can be used to expand the experience of dance, not limit it. She is interested in what is possible for an older dancer and what is missing from dance because of the bias towards youth.

Russell Maliphant PhD formed the award-winning Russell Maliphant Dance Company in 1996 and has also worked with renowned companies and artists including Sylvie Guillem, Robert Lepage, Isaac Julian, English National Ballet, BalletBoyz, Munich Ballet, and Lyon Opera Ballet.

Russell trained at The Royal Ballet School and graduated into Sadler's Wells Royal Ballet before leaving to pursue a career in independent dance. Between 1991–1994 Maliphant studied anatomy, physiology and biomechanics, and qualified as a practitioner of the Rolf Method of Structural Integration (or Rolfing) in 1994. These studies inform both his teaching and choreographic work, along with a diverse range of body practices and movement techniques. He was the guest artistic director of National Youth Dance Company in 2019 (which was somewhat challenged by the Covid-19 pandemic) and gained his PhD from Canterbury Christ Church University in 2021, the first choreographer to gain a PhD by publication as choreography.

Abstract

Dance with the older body is often viewed as a means to slow the physiological and cognitive decline associated with ageing or chronic health conditions. However, little research has taken place that investigates the aesthetic qualities and performance potential of mature dancers and how this performance focus might influence health outcomes.

During a choreographic project bringing together a renowned contemporary dance company with a company of mature dancers, a co-designed, mixed methods approach was taken to explore the impact of a somatically informed approach to choreography on the dancers' movement quality, efficiency and aesthetic.

Standard overall health measures showed no statistically significant differences between pre and post-test scores for this group who already scored highly at pre-test. Subjective changes in movement quality were observed. Dancers exceeded their preconceived expectations of performance quality, attributing this to perceived improvements in balance ability along with the trust placed in them from the professional company.

Key words: Somatics, Dance, Aesthetics, Mature dancers, Older dancers, Older bodies

Introduction

Dance research amongst older bodies has previously focused on the use of dance as an intervention to address decline in physiological and cognitive function, or chronic health conditions (Alpert, 2011; Bungay et al., 2020; Kattenstroth et al., 2013; Keogh et al., 2009; McGill et al., 2019; McRae et al., 2018; Schroeder et al., 2017; Vella-Burrows et al., 2019), however little research has considered the creative, aesthetic and artistic outcomes of dance with older bodies alongside these health benefits.

Russell Maliphant Dance Company (RMDC) has at its core Russell's unique somatic practice drawn from his studies of anatomy, physiology and biomechanics, and as a qualified practitioner of the Rolf Method of Structural Integration (or Rolfing) (Rolf, 1977). These studies inform both his teaching and choreographic work, along with a diverse range of body practices and techniques including classical ballet, contact improvisation, yoga, capoeira and tai chi. Russell's PhD research (Maliphant, 2020) examined 'body theories', embodiment and reflective practice as an artist making choreographic works, and incorporated current research into fascial anatomy and fascial architecture (informed by the work of Thomas W. Myers (Myers, 2014)) in relation to somatic practice and dance choreography, particularly the flow of movement. 'Flow' in Maliphant's work is characterised, as described by Gary Ward (Ward, 2013), as a natural order of the whole body's movement patterns, achieved when there is zero restriction to joint motion anywhere in the body. Improved flow occurs when the number of restrictions to the body's movement patterns are reduced.

The need to consider the aesthetics, artistry and creativity of dance on the older body and their contribution to wellbeing beyond the purely physiological has been recognised, however more research is needed (Chappell et al., 2021; Houston, 2015).

The aim of this study was therefore to investigate how a deeper embodied understanding of the anatomical structures and biomechanics of the moving body engendered within a creative

dance context impacts the movement efficiency, aesthetics and health outcomes of older adults. We were curious to explore how a somatically informed approach to choreography could enable mature dancers to push beyond their expectations and challenge perceptions of their physical and performance capabilities.

Dance for older adults

The benefits of the arts on the health and wellbeing of older adults has been widely recorded (Chappell et al., 2021; Keogh et al., 2009). Dance activity incorporates rhythmic motor coordination, balance and memory, emotions, affection, social interaction, acoustic stimulation, and musical experience (Kattenstroth et al., 2013) as well as physiological benefits such as strength, balance, gait and improvements to aerobic capacity (Keogh et al., 2009). When compared with other physical activities, dance resulted in similar physiological outcomes, but additionally provided better psychological outcomes for participants. It has been suggested that this is linked with the creativity aspect of dance class, as well as the contribution of movement, dance and creativity combined within one workshop (Connolly et al., 2011).

Dance has therefore been established as a beneficial tool for those with Parkinson's (McGill et al., 2019; McRae et al., 2018), for those living with dementia (Gómez and Gómez, 2017), cardiorespiratory disease (Philip et al., 2020), and as a falls-prevention programme (Vella-Burrows et al., 2019). However, current dance for health publications vary in methodologies and therefore can pose difficulties in comparison of dance interventions and consideration of proposed outcomes and benefits (Chappell et al., 2021; Clift, 2020; McCrary et al., 2021).

Previously, dance with the older body has often been viewed as a means to slow the physiological and cognitive decline associated with ageing or chronic health conditions, rather than a means of creative expression and performance. Little research has taken place that investigates the aesthetic qualities of dance in the older body, as well as creative and artistic elements (Chappell et al., 2021) of the choreographic and performance process.

Whilst there are a number of performance focused companies for older adults, the authors are not aware of any research to date on the aesthetic outcomes, demonstrated by the dancers' performance, of the choreographic and movement processes employed by these companies, or how this aesthetic performance element interacts with health outcomes.

The focus on health and wellbeing in older adults involved in dance classes limits the phenomenal experience of dancing as an older body. It does not explain the dancers' drive, passion and motivation. It does not explain why they dance and what drives them to commit time and energy to become better dancers. Without understanding this, it is difficult to transfer the learning and encourage the wider population to engage with the positive outcomes associated with dance. This creates an inherent dualistic divide. The term *health and wellbeing* separates body (health) from well-being (mind) and within this separation lies the possibility of hierarchical judgements. By framing dance phenomenologically, we draw on Maxine Sheets-Johnstone's assertion; 'Dance is not only a kinetic phenomenon which appears, which gives itself to consciousness; it is also a living, vital human experience as both a formed and performed art' (Sheets-Johnstone, 2015).

Somatic informed approach to choreography

Somatic practice opposes this dualistic divide, considering the mind and body as a synergistic whole and a practice of observing oneself from within (Green, 2002). Somatic-informed movement practices (SIMP) bring attention to sensory processes (Batson and Schwartz, 2007), allowing a moment to listen to the body, take time to breathe and feel (Eddy, 2010). A report into the use of SIMP in hospital settings found that the practitioners' own somatically informed bodily awareness helped guide participants in finding their own resources, and that the use of improvisation allowed them to meet the relevant needs of that individual (Collinson and Herd, 2020).

This approach to finding and generating movement that draws from the individual has also been used in professional choreographic settings, where the aim is to create aesthetically beautiful movement in a cohesive dance work to be shared with an audience. In this case the focus is on the aesthetic performance first and foremost; created through a healthy and biomechanically sound approach to movement development.

In his PhD Thesis Maliphant (Maliphant, 2020) explains that following injury he 'experimented with what was possible, healthy and sustainable, for me and other dancers I was teaching or working with' using his knowledge of a wide range of somatic practices to develop, as Susan Klein (Klein, n.d.) describes of her technique, 'a profoundly deep level of understanding the full use of the body as an integral whole to maximize full function of each individual's unique movement potential'. Maliphant integrates this somatic approach to his choreographic process as he is 'influenced and inspired by the movement vocabulary [seen] in individual performers' and 'paints with the different techniques and experiences the dancers have mastered and embodied' (Maliphant, 2020). He sees somatic practice as a tool or resource that helps to uncover movement potential that can be used choreographically to achieve 'aesthetic impact'. An approach that would appear to be well suited to working with a wide variety of individuals including older adults.

From a very young age, western society focuses our attention on our minds. The remnants of belief in the dualist mind/body divide (Descartes, 2008) preferences what we think, over what we do and experience. As soon as we start school, our movement is curtailed, we sit, we think, we learn (Robinson, 2011). By the time we reach older age, we have spent many years focusing on our minds and we often forget how to focus on what our bodies can do (Brown and Vaughan, 2010). Phenomenal philosophy reconnects mind and body, understanding that we are a cohesive whole. This does not mean we cannot distinguish between the elements that make up the whole being, just that each element is connected (Husserl, 2012).

The aim of this project was therefore to investigate how a deeper embodied understanding of the anatomical structures and biomechanics of the moving body from this somatic viewpoint impacts the movement efficiency, aesthetics and health outcomes of older adults participating in creative dance sessions with a performance goal. It was hypothesised that, due to the existing levels of physical activity within this well-established group, levels of physical and mental wellbeing, including quality of life, would be high, but that there would be perceivable improvements in movement ability and quality of movement by the end of the project.

Methodology

Fifteen dancers (F=13, M = 2) were recruited from EncoreEast, a performance company for mature dancers based in Ipswich, UK. The mean age was 68.27 ± 6.32 years with 19.53 ± 21.14 years dance experience. All participants gave informed consent and completed a medical par-q to identify any contraindications to exercise prior to commencing the project.

None of the dancers had sustained an injury in the previous six months, and twelve of the dancers also took part in additional physical activities including Pilates, swimming, walking,

cycling, yoga and other dance classes including ballet and tap. The participants had been dancing with EncoreEast for 6.71 ± 3.54 years and had also recently completed a 6-week online dance project with RMDC.

In order to begin to answer our questions about the relationships between somatically informed creative dance practice, health and aesthetic performance outcomes in this group of mature dancers, a mixed methods approach was chosen. Chappell et al (Chappell et al., 2021) suggested that methodological developments in research exploring dance and its aesthetic, creative and artistic elements alongside health, need to be able to capture the complexity of these interactions, 'reflecting dance's embodied qualities and emphasising process over outcome'. As such they advocate considering the use of new and mixed methodologies including a phenomenological approach, co-designing research with the artists and participants and the use of interview-data, film and participant observation alongside appropriate quantitative measures.

In line with these recommendations, for this project dancer-participants and researchers co-designed the research, choosing methods that would be simple to administer with minimal impact on the main purpose of creating a dance work and also taking into account the Covid-19 recommendations on social distancing at the time. An auto-ethnographic approach with a dancer-participant-observer was complemented by all dancers participating in post-intensive discussions led by the ethnographer, 8 of the 15 dancers keeping reflective diaries, interviews and a series of quantitative measures to gain objective and subjective insights into experiences of pain, overall health and changes in range and quality of movement.

Ethical approval was granted by Middlesex University Arts and Creative Industries ethics committee.

Prior to participation in an 8-week choreographic project with RMDC, led by two of RMDC's dancers, Edd Arnold and Alethia Antonia, participants completed an online survey and attended a testing session at DanceEast, Jerwood Dance House, Ipswich. In-person testing took approximately 20 minutes per participant. These tests were repeated after the 8-week dance intensive, but prior to the final performance.

Psychological and quality of life measures

Participants completed the Short form 36 (SF-36) via an online Qualtrics®XM survey form. This was completed at home by participants in their own time. The short form 36 is a self-report survey consisting of 36 tick box questions relating to eight health concepts: physical functioning, bodily pain, role limitations due to physical health problems, role limitations due to personal or emotional problems, emotional well-being, social functioning, energy/fatigue, and general health perceptions. The SF-36 was chosen as a widely used quality of life survey that was easy to administer in order to give an indication of a range of physical and psychological health concepts including 'vitality'. It has been shown to have high internal consistency as a whole and for the subgroups listed above (Jenkinson et al., 1994). Scoring for the SF-36 results in a score between 0 and 100, with a higher score indicative of better health.

Physiological measures

Following a self-guided 5-minute warm up participants completed a sit to stand test. The sit to stand test is a common clinical assessment for lower body strength in older adults.

Participants are requested to sit with their arms crossed on their chest (Figure 1A) and to stand up and sit down five times as fast as possible. This test was recorded for 2D motion capture alongside assessment of a laterally viewed roll down (Figure 1B), shoulder flexion bilaterally (Figure 1C), lateral flexion (Figure 1D) and torso rotation. Torso rotation was

completed twice to each side, once with the head remaining directly ahead (Figure 1E), and once with the head following the movement of the torso (Figure 1F). Minimal verbal direction and demonstration was given by the researcher.

Participants then learnt a short movement phrase. This phrase was taught once, followed by 4 familiarisations, then recorded with the researcher demonstrating the movement off-camera. Follow up tests consisted of 2 familiarisations followed by a recording.

All footage was visually inspected for subjective movement analysis by the researchers and also analysed using Dartfish Live.

{FIGURE 1 HERE}

Figure 1: A) Start position for Sit to Stand Test B) Lateral view: Roll down C) Shoulder flexion D) Lateral flexion E) Torso rotation with head remaining anterior F) Torso and head rotation.

Ethnographic data

Participants kept weekly journals reflecting on their experience. During the intensives all dancers also participated in structured discussions. These recorded conversations were led by the ethnographer using targeted questions focused on the dancers' experience of the whole creative process.

Pain

Throughout the 8-week choreographic project, participants were asked to rate their pain daily, at the same time of day each day, using a likert scale where 0 represented no pain and 10 the worst possible pain (Williamson and Hoggart, 2005). The decision was made following discussions between dancer-participants and researchers to provide two scores; one for

existing pain, which related to pre-existing conditions such as pain resulting from long-term injury or operations, and the second for general pain, which included any non-pre-existing aches and pains. These two scores allowed for existing pain associated with older age to be considered. They were asked each day to record the highest level of their pain for both categories during the past 24 hours.

Dance intervention

Participants took part in an 8-week choreographic dance project with company dancers from Russell Maliphant Dance Company. Sessions were broken down into 4 x 2-day intensives over the 8 weeks, with an additional 3 days of dress rehearsals and performance. The intensives built on an online programme of 5, weekly, 'getting to know each other' creative dance workshops with Russell Maliphant Dance Company that, due to coronavirus restrictions and precautions, took place on Zoom 3 months prior. Edd and Alethia led the dancers in class and creative tasks using Russell's somatic approach, to develop a 20-minute performance titled *Focus*.ⁱ The RMDC company dancers structured the technique classes so ideas that had been developed through the somatic approach could flow into the creative process.

Statistics

All quantitative data was analysed using the Shapiro Wilk tests for normality using IBM® SPSS® Statistics (Version 25).

Sit to stand test results were normally distributed and thus investigated for differences between pre and post testing via t-test. The SF-36 results were not normally distributed and as such were analysed via a Wilcoxon paired samples test. Statistical significance was set at $p < 0.05$ for all tests.

Results

No statistically significant differences were found between pre and post testing in the sit to stand test, although an improvement was noted (8.60 ± 1.86 secs and 7.43 ± 1.95 secs respectively) (Figure 2 and Figure 3).

{FIGURE 2 HERE}

Figure 2: Sit to stand scores pre-dance intervention

{FIGURE 3 HERE}

Figure 3: Sit to stand scores post-dance intervention

Within the SF36, no statistically significant results were found between pre and post testing for any of the eight health concepts (Table 1). Two dancers did not complete both surveys and one sustained an injury which impacted on physical perceptions recorded in this survey. Their data was therefore removed from the analysis.

	Pre	Post	Sig.
Physical function	91.67±9.37	90.00±11.08	0.433
Role limitations due to physical health	81.25±33.92	83.33±26.83	0.931
Role limitations due to emotional problems	69.42±41.39	80.58±26.49	0.357
Energy/fatigue	65.83±14.43	69.09±14.46	0.281
Emotional well-being	77.0±13.00	80.00±17.31	0.255
Social functioning	88.58±12.45	87.58±15.99	1.000
Pain	79.75±17.06	78.75±18.99	0.863
General health	78.33±12.12	78.75±13.16	0.836

Health change	64.58±19.82	72.92±22.51	0.102
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Table 1. SF-36 scores pre and post dance intervention. P<0.005

Visual inspection of the recorded movements revealed compensatory strategies throughout the body to achieve greater range of motion at a given joint. For example, when recording shoulder flexion, most participants utilised hyperextension of the thoracic spine, slight torso rotation towards the working arm, and external rotation of the shoulder. These compensations meant that joint angle measurement was not possible due to movement of the bony landmarks such as the acromion process beyond the required movement of glenohumeral rhythm.

Subjective differences in quality of movement were noted between pre and post-test where movements appeared more controlled.

Generalised pain as presented in Figure 4 demonstrates a peak in pain scores in relation to intensive training days with RMDC. Scores are presented as a deviation above and below baseline scores recorded at the beginning of the project. Higher spikes in pain scores appear to correlate with dance intensives throughout the course of the project. Existing pain as presented in Figure 5 shows a slight echo of the peaks around the intensives although overall less of a change from baseline and more time spent in decreased pain.

{FIGURE 4 HERE}

Figure 4: Generalised pain scores

{FIGURE 5 HERE}

Figure 5: Existing pain scores

Inspection of the qualitative data gathered during the eight-week creative project revealed that two words were used consistently across all forms of data and by the majority of participants - balance and joy.

Balance became the gain most often spoken about by participants. By first locating their weight and pressure into the feet, the dancers began to notice moments when the impact of improved balance transferred into their dancing.

I can at last report that this week I had my very first physical eureka moment. At long last I could feel the warmth beneath my feet and the roots of my personal tree growing deep into the earth! It was a totally amazing experience and one I can still feel now. Keeping that going is the challenge.

Edd says bring your weight into the feet, push the weight forward as you unfold back, I feel like I might look like RMDC's Grace in 'that backbend', everything is aligned right. I am rock-steady even though it is an incredibly vulnerable position for me. I'm elated.

Research data revealed the importance of 'joy' in dance. Both as a phenomenal experience and an intrinsic motivation. Its relevance links to Houston's articulation of 'the joy of moving and the humanising effect of dancing with others' (Houston, 2015).

Until we started the RMDC zoom sessions, I'd seriously considered giving up dancing - my body seemed no longer to work. Starting to try to develop Russell's technique enabled me to re-engage with my body & explore how/why it works in the way it does. It has been a lesson in dedication to ourselves and to dance, more importantly I have regained the joy in dancing.

I have never been challenged like this before. They have been a delight to work with and these last few weeks of intensive rehearsals have been glorious. I didn't think I would be able to keep up as well as I have. I didn't realise what joy could come from such hard work.

The importance of being noticed and feeling seen was also reported by the dancers. Although uncomfortable at first, it led to dancers finding a way of exploring and valuing their own uniqueness in movement.

Today I was able to engage freely with my whole body. I was able to see those connections that we had been learning about and realise them in flowing movements. In this process I am beginning to understand how the 'technique' of using the body's structure is allowing me to move naturally. It seems to be creating a new language of movement within EncoreEast.

Discussion

Although no statistically significant differences were reported for the SF36, scores were already high for this age group and therefore there was limited scope for improvement. When compared with cross-sectional results from older adults aged 65+ (Walters, 2001), EncoreEast dancers scored higher, thus in better health, on all subscales even before the dance intensives. This may be due to the dancers already being physically active, having self-selected into a dance company, and therefore already in better health physically and mentally than sedentary adults of the same age. EncoreEast dancers scored similarly, and in some subscales higher, than sedentary women aged 25 - 50 years old (Barranco-Ruiz et al., 2020), both before and after a dance fitness and strength training intervention. Quality of life across all subscales has been demonstrated to decline with age (Walters, 2001), so it may be

postulated that continued participation in physical and social activities may have a beneficial impact on quality of life, and thus slow this decline.

Increases in lower body strength were noted in the sit to stand test, although not of significance. It is possible that the focus on the articulation of the foot during the dance workshops, as well as the physical implications of working with the lower body resulted in an improvement in balance and lower body strength. However, it should also be noted that a competitive edge or a greater sense of self-belief in their ability to carry out the task at the post-testing stage may have also resulted in improved results. Subjective observations of movement quality and stability during the sit to stand test did not see any improvement, and was noted by the researchers to have decreased with the respective increase in speed.

Participants' weight was consistently in the heels on standing, resulting in a heavy arrival onto the chair, slight anterior-posterior sway and therefore potential to lose balance on sitting. These altering strategies may therefore have resulted in the improved speed of the test, rather than as a result of increased lower body strength.

The dancers were interested in exploring the patterns of pain experienced due to the niggles of 'getting older' and understanding how this might impede or be impacted by the dance project they were undertaking. General pain scores as reported by the dancers appeared to demonstrate the effect of delayed onset muscle soreness (DOMS) through the direct correlations between the peaks in pain scores and the dates of the dance intensives or other additional dance activity outside of that delivered by RMDC. Over the course of the choreographic project, these peaks during intensives gradually became lower, suggesting that the body was adapting to the increased demand, and therefore a decrease in generalised pain was observed. A slight exception to this was observed during the performance period, where the physical demands were different, with the technical rehearsal day also involving a larger amount of time standing and noted to have exacerbated back pain in some cases. Existing

pain scores were generally lower than baseline throughout the course of the project. These pain scores suggest that the physical activity is not having a negative impact or causing any harm to the participants, but instead that older dancers are able to push past preconceived ideas around mobility and stresses of physically demanding activity such as dance.

It was noted that prior to participation in the dance intensives, there was some trepidation amongst dancers of their ability to cope with two-day dance intensives. However, by the end of the project these perceptions of their own ability had shifted as they expressed that ‘it was rewarding to discover you could cope with the intensive’ and that they would prefer to continue working this way in future. This demonstrates that preconceived ideas of physical ability can place restrictions on participation in physical activities such as dance, but that these perceptions can be broken and reframed through movement exploration.

The observational data uncovered the importance of attention. Both ‘attention to’ and ‘attention of’ the dancer, became relevant aspects of the experience. The increasing sensation of invisibility as we age in western society, made the action of attention more relevant with this group of mature dancers. Throughout the creative process, the EncoreEast dancers reported feeling seen, not only by Edd and Alethia, but by the professional way the whole RMDC team regarded them. One participant noted:

Alongside the power of their focus, they have a lightness and good humour that made me feel supported. At times I loved feeling like part of a puzzle to be solved, a dancers’ toy box. We might be a bit scruffy and well-worn, but our long-life experience felt valued. I loved the sense of enabling the dancers to create and play; it felt like a fair exchange for their expertise and care.

This being seen, noticed and respected raised the dancers above their perceived selves. Its value is particularly pertinent to this age group. The reciprocal nature of ‘witnessing’ as

introduced by Jane Adler means the act of being seen by another aids the development of self-awareness and self-growth (Whitehouse et al., 1999). Self-awareness and attention facilitate intrinsic motivation leading to the possibility of ‘the fullest representations of humanity’ (Ryan and Deci, 2017). With age our attention moves from ourselves outwards, to families, work and responsibilities. We stop attending to who we are and reciprocally the world stops attending to us.

RMDC’s practice focuses attention on what is possible from each individual. Not what can be imposed externally, but what each of us can find within ourselves. For an age group that has simply stopped noticing themselves, asking them to perceive their own possibilities seemed like a daunting task. However, RMDC’s intrinsic attention to detail is not a way of training them to dance in a particular technique, but instead offers a pathway to finding the dancers’ own uniqueness in movement; an approach that is applied throughout RMDC’s works.

Subjectively, these alterations in perception of the self were observed in the movement quality of the recorded movement phrase as well as in the final performance. Pre-dance intervention, dancers appeared to have a more external focus, having a detrimental impact on movement smoothness and balance. Following the dance intensive with RMDC, dancers appeared to be calmer, with an increased self-awareness, and internal focus that impacted the quality of movement. This was coupled with a perceived improvement in balance, related to a feeling of groundedness and connection with the earth and the biomechanics of the feet.

I could stand, and think and feel, and push those feet into the ground or relax and release all tension and let the body sink into the feet. I began to be totally aware of how moving forwards, backwards and sideways was so dependent on the feet.

Bending forwards with the weight of the body on the front foot and learning how to

release the back leg and keep the balance and still move as a dancer was hard but gradually it all made sense and the body reacted and worked with the feet.

This internal perception of oneself is a fundamental aspect of somatics, of the body as perceived from within, and it is possible therefore that Russell Maliphant's approach to movement has fostered this internal focus in the EncoreEast dancers; allowing a greater attention to the physical sensations of movement and awareness of the body in space.

The dancers finding an increased ease or flow in their own movement allowed them to extend beyond themselves and connect with the movement flow of others. In this moment of perpetual 'formed and performed' movement (Sheets-Johnstone, 2015) we realise a movement aesthetic beyond our limited expectation.

Today I was able to engage freely with my whole body. I was able to see those connections that we had been learning about and realise them in flowing movements. In this process I am beginning to understand how the 'technique' of using the body's structure is allowing me to move naturally. It seems to be creating a new language of movement within EncoreEast.

The project's aim of having a final public performance of *Focus* was pivotal. Its presence affected the dancer-participants' emotional and physical relationship to the journey. It provided a focus and a stimulus for participants' motivation, alongside the possibility of analysing aesthetic performance outcomes. The professional expectations of RMDC enabled a process where extrinsic motivation transformed through care and practice into intrinsic motivation, pushing the group beyond their imagined limits and as one dancer stated when considering improvements, 'aesthetic [performance] is a much more meaningful motivation... you need to be healthy for a purpose!'.

The dancers spoke about how the trust put in them from the RMDC to be capable of performing in such a professional context with high production values helped them to rise to the challenge.

Alethia and Edd put their trust in us, willing us to be the best we could be and to perform with emotion, love and feeling. It wasn't just Edd and Alethia who drew us in and pushed us on but all the multitude of technical staff who were with us all the way, guiding us through the storm and to the light at the end of the tunnel.

Feedback from audience members at the final performance reflected the dancers' own perceptions of having experienced improvements in their movement and performance quality over the course of the project.

So good! Really impressed that all had the same quality in their movement. Such an exciting piece. The links between 'sections' reminded me of RM's The Thread. Beautiful music & lighting. Visually stunning.

I thought it was beautiful ... on so many levels and felt it quickly became ageless in execution. I think you can tell when you're watching something that everyone, from dancer to technician et al has really cared about this piece ... there seems a lot of heart and soul.

Limitations

This study took the form of field research where the researchers visited the dancers at the dance studio to carry out testing. Covid-19 was also still present during testing and therefore physical contact with participants was minimised. This meant that markers for 2D motion capture were not utilised which would have improved the accuracy of the joint range of motion assessment. Instead, subjective visual inspection of the movements took place and it

is therefore recommended that markers or the use of a Xsens suit or isokinetic dynamometer is employed in future research to ascertain more detailed, quantitative analysis of these movements.

Additionally, the SF-36 and pain scores were reported by the individuals retrospectively. During the SF-36 participants are asked to consider the previous 7 days in relation to the question, and for the pain scores the previous 24 hours. As with all retrospective self-report data, there is potential for recall bias or misinterpretation of the questions.

Conclusion

As far as the authors are aware, this is the first study of this nature to investigate the impact of dance on the aesthetic qualities and health of mature dancers in a performance-based dance company.

Due to the paucity of data in this specific area, the measurements selected for this study, in particular the SF-36 and sit to stand test were selected from previously used tests in dance for health studies with mature adults. Due to the physically active nature of the participants of this company no significant changes were observed due to already high scores at the pre-testing stage. It is therefore suggested that these tests are not suitable for measuring change over time in active older adults such as the dancers of this company, and that instead future research should treat the participants as dancers first and foremost, rather than as older adults. Additionally, compared with community-based dance projects with a primary focus on participation in regular classes, this project treated the dancers as a professional company, co-

designing the project with RMDC and actively participating in the creative process.

Therefore, there is an important distinction to make between current research in dance for health and the ground-breaking nature of this project, investigating the experiences of mature dancers within a professional performance company.

The theme of improved balance came through strongly in the qualitative data, future projects employing somatic-informed dance creation might benefit from including some dance-specific balance tests to quantify any improvements gained.

For older dancers there is something important in the development of a practice that enhances life. A practice is not undertaken to reach a single conclusion; it is repeated, adjusted, and performed and then repeated again. Its eternal loop, we can argue, provides an antidote to Western society's expectation of age as a willingness to settle, to live a life without aim or expectation. RMDC's holistic approach to the creation and execution of movement has a focus on the whole experience of dance from creation to performance. It demonstrates the possibility of focusing attention and joining mind, body, emotion and spirit in the movement and moment of creativity, utilising equally all of who we are. The connections experienced led participants to express the joy they found in movement.

It is therefore recommended that further research is carried out into the movement quality and aesthetics as perceived subjectively by those witnessing it as well as the dancers themselves. Additionally, the impact of the collaborative nature of the creative process with this group of mature dancers could be further investigated and its impact on feelings on belonging, competence and relatedness when working as a professional company and being actively involved in decisions and co-design of the project. The relationship between balance and aesthetic performance could also be explored further. There is a need for research which treats the older adult as a dancer first and foremost, with the same inherent exploration of

movement possibilities, creativity and performance. Additionally, future randomised control trials that compare those participating in dance activity, alongside those participating in other physical activities and a sedentary age-matched control group would be beneficial to ascertain the true impact of dance on this population. RMDC's approach to choreography with this age group provides rich possibilities for further investigation, and it is suggested that these aspects of the mature dancing body are also explored with other performance companies.

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ⁱ Focus - <https://youtu.be/3rPVIvbcHyI> Focus: The EncoreEast Project <https://youtu.be/xl8gXXplOXE>