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### Movement Matters: Results of an Introductory Dance Project at the Village of Humber Heights - Report Series # 16

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*Sheridan Elder Research Centre*

Report Series - # 16

# ***Movement Matters: Results of an Introductory Dance Project at the Village of Humber Heights***

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### **About SERC (Sheridan Elder Research Centre)**

Through applied research the Sheridan Elder Research Centre (SERC) will identify, develop, test and support implementation of innovative strategies that improve the quality of life for older adults and their families.

1. Wherever possible, older adults participate in the identification of research questions and contribute to the development of research projects at SERC.
2. We conduct applied research from a psychosocial perspective which builds on the strengths of older adults.
3. Our research is intended to directly benefit older adults and their families in their everyday lives. The process of knowledge translation takes our research findings from lab to life.
4. SERC affiliated researchers disseminate research findings to a range of stakeholders through the SERC Research Report Series, research forums, educational events and other means.
5. A multigenerational approach is implicit, and frequently explicit, in our research.
6. To the extent possible our research is linked to and complements academic programs at the Sheridan College Institute of Technology and Advanced Learning.

### **EXAMPLES OF SERC RESEARCH**

<b>Creative and Performing Arts</b>	<b>Lifelong Learning</b>	<b>Civic Engagement</b>	<b>Human Communication</b>	<b>The Built Environment</b>	<b>Accessible Technology</b>
Promotion of healthy aging  Strategies to increase participation	Addressing barriers to learning  Learning in retirement homes and long-term care	Volunteer work as non-traditional source of personal development	Solutions for older adults with hearing, vision, and cognitive impairments	What is the role of design in health, quality of life, and ability to age at home?	Supporting adult learners of new technology  Development of technology to benefit elders

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\* Appendices available upon request



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*Recent surveys suggest that, although they seem to understand its value and importance (Ory et al., 2003), less than a quarter of all older adults get the recommended amount of exercise (Statistics Canada, 2005). It is possible that the majority of exercise programs currently available are traditional and gym-based, offering limited ways of encouraging active engagement that may not be appealing to many older adults. In recent years, the benefits of dance programs that incorporate flexibility and balance training have been explored. The current pilot project examined the potential for dance training to be considered an innovative health promotion strategy, one that encourages healthy aging and helps to maintain functional autonomy. Older adults from the Village of Humber Heights participated in 12 weeks of ballet and contemporary dance training. Pre- and post-dance training physical (flexibility, agility, muscular endurance and balance) measures were gathered. In addition, participants were invited to write in a journal for the duration of the dance training; this allowed the researchers to identify potential internal and external barriers to inclusion in physical activity (e.g., self limiting beliefs, stereotypes and/or lack of opportunity).*

## **1. Introduction**

### *1.1 Background and Context*

Longevity is a great success story of the past century and population aging the defining characteristic of the times in which we live. Within the next 25 years, the number of Ontarians over the age of 65 is expected to double, from 1.5 million to 3 million. By the year 2041, 23% of Ontarians will be older than 65 years of age. This demographic shift brings with it both challenges and opportunities. One challenge inherent in this “agequake”<sup>1</sup> is how to manage longevity without putting undue strain on an already overburdened health care system. One promising solution lies in an increased emphasis on health promotion<sup>2</sup>.

Whether one is living in his/her own home, a retirement residence or in a long term care home, an individual’s health status and life satisfaction can be enhanced by physical activity. However, traditional exercise programs offer limited ways of encouraging ‘participACTION’<sup>3</sup>. Through one provincial research study and two learning roundtables conducted at the Sheridan Elder Research Centre (SERC), older adults consistently reported the desire for choice in their learning. It seemed reasonable to the SERC team to believe that this desire for choice might extend to determining the type of physical

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<sup>1</sup> A term coined by Julia de Tavares Alvarez, former alternate representative of the Dominican Republic at the United Nations in New York.

<sup>2</sup> Health promotion is defined as “the ability to enhance and maintain health by locating and using health related information from a variety of delivery methods”. Adapted from the CCL report titled Health Literacy in Canada: Initial Results from the International Adult Literacy and Skills Survey, 2007.

<sup>3</sup> A Canadian government program launched in the 1970’s to promote healthy living and physical fitness. As a result of financial cutbacks, it was discontinued in 2001 but re-introduced in February 2007.



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activities in which older persons participate. While acknowledging that there are many ways to incorporate ‘movement’ into one’s life, this exploratory pilot project focused on dance.

Furthermore, the SERC team recognized that falls are a primary cause of admission to acute care by older persons, with up to 85% of injuries requiring hospitalization for older adults in Canada being linked to falls (Canadian Institute for Health Information, 2004). The potential for the physical benefits of dance participation to help to reduce the risk of falls has tremendous implications for older adults’ independence and living arrangements. Once admitted to hospital with a hip fracture, for example, older adults are frequently discharged to a greater level of care than was the case upon admission.

This pilot project acknowledged and built upon research that demonstrates both the cognitive and physical health benefits of active participation in artistic activities. If we acknowledge that individuals may not be interested in traditional exercise programs, we must offer alternate opportunities for ‘movement’ that may appeal to older persons. In addition to the physical benefits of dance, researchers have noted psychological and social benefits, such as increased feelings of self-esteem, self-confidence, release of tension and anxiety and improved communication skills. There can be a sense of mastery and empowerment that results from movement and dance. Many older adults feel a loss of control as they age; mastering dance can contribute to a greater sense of control and enhanced life satisfaction. Liz Lerman of the Liz Lerman Dance Exchange in the United States, while teaching weekly dance classes for residents of the Roosevelt Centre for Senior Citizens in Washington, D.C, noted the benefits of dance with older adults. She reported that stiff limbs became flexible, brooders became storytellers, and passive residents in a facility became active citizens (Sherman, 2006).

Finally, it is important to note that early socialization patterns may result in older adults who are uncomfortable trying new things. They may accept self-limiting beliefs about what they can and cannot do in later life such as learning to dance, paint, write poetry or sing. For other older adults, opportunities to engage in skill based arts activities were simply not available as they were growing up.

Therefore, beyond physical health, psychological, and social benefits, active participation in the arts provides unique opportunities for older persons to both experience novel learning and expand their notion of what is possible as they age. As Andrea Sherman (2006) writes, “The arts can play an integrative role, helping elders to discover and build new skills and to make meaning of experience.”

Despite the potential benefits, there are many barriers to active engagement in the creative and performing arts. Beyond the aforementioned internal barrier related to risk taking, a significant external impediment is the lack of accessible, age appropriate opportunities for many older adults. One way that the research team affiliated with



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SERC hopes to encourage physical activity among older adults<sup>4</sup> is to both reduce barriers to inclusion and to increase opportunities for active participation in the performing arts.

The opportunity provided to SERC by the Schlegel-UW Research Institute for Aging (RIA) and the Village of Humber Heights (Schlegel Villages) enabled the SERC team to conduct an exploratory study to determine the potential for offering dance classes in retirement and long-term care facilities.

### *1.2 Purpose*

The purposes of this exploratory pilot project were to:

1. Determine whether weekly dance classes improve life satisfaction and self reported health status of older adults living in Schlegel Villages.
2. Measure physical benefits of dance participation.

## **2. Methodology**

This pilot project used a multi-method approach, incorporating both qualitative and quantitative measures. The opportunity to participate in dance training was open to anyone living in The Village of Humber Heights. The Activity Director posted a recruitment flyer (Appendix A) and also spoke directly with individuals whom she thought might be interested in participating. Due to the exploratory nature of the project, the researchers did not impose any inclusion/exclusion criteria. Interested older adults were invited to participate in 12 weeks of twice-weekly dance classes. The classes were each one hour in duration. Through an assessment of the literature, it was determined that 12 weeks was the minimum amount of time necessary to assess any physical changes.

### *2.1 Ballet Classes (Tuesdays)*

Participants were introduced to the 5 positions of the feet and arms that are fundamental to any dance style. Exercises were built upon structurally and included musically different steps and rhythms. For specifics of the ballet exercises, please refer to Appendices B and C.

### *2.2 Contemporary Classes (Thursdays)*

The Thursday morning classes complemented the ballet classes with different dance styles (e.g., the Charleston and the Shorty George). The classes included a seated 4-rhythm sequence designed to enhance memory and cognitive skills. Please refer to Appendix D for the specifics of these dance steps.

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<sup>4</sup> The general age guideline for arts based research at SERC is 50+. That age guideline was waived for persons living in Schlegel Senior Villages.



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### 2.3 Data Collection

Prior to any data being collected, all participants either signed a consent form (Appendix E), or gave their verbal consent. In the case of one cognitively impaired participant, her daughter provided consent for her to participate in the dance classes. Participants were informed that images and videos might be taken during the dance classes and interviews and that, although these could be used in future presentations (e.g., at conferences) or in reports, their personal information would never be shared. The following methods of data collection were used in this project:

1. Each participating individual was invited to write in a guided journal that tracked his/her experience in the dance program. Participants were provided with a few guided questions to frame their writing.
2. A participant history profile was completed in the initial interview (Appendix F)
3. Observational notes were kept by the two dance teachers (see Appendix G and H). These included observations about individual participation, group and individual behaviours and anecdotes that the teachers determined to be noteworthy.
4. Pre and post measures of the following:
  - Muscular strength (*Hand-held weights*)
  - Aerobic endurance (*2-minute marching test*)
  - Balance (*Berg Balance Scale, see Appendix I*)
  - Hamstring flexibility (*Sit and reach*)
  - Joint flexibility (*shoulder & hip*)

### 3. Results

Although participation fluctuated with each class, there were 6 regular participants (2 men, 4 women). Based on a review of the data collected, this exploratory pilot project demonstrated that dance, as an alternate form of exercise, appears to be extremely promising. Although pre and post training interviews were conducted with five participants, for a variety of reasons, complete sets of physical data (pre and post training measures) were collected from only three participants.

In the following sections, comments by participants have been used extensively as their experiences are best expressed from their perspectives. At the post training interview, the interviewer guided the participants to focus on four specific categories in describing their experience in the program: learning, social interaction, cognitive changes, and physical changes. In the sections below we discuss, in particular, the comments participants made concerning their physical changes, and have interspersed comments from the other categories in the remainder of the document.





### 3.1 Physical Changes

All participants reported physical benefits. Some of their post project interview comments included:

- *“I am more active and feeling better”*
- *“Class focuses on hips and core body strength to increase stability and safety while walking, that’s what I needed!”*
- *“Class oxygenating the body, which we elders lack, and at end of class feels good physically and mentally, it’s just a joyful class and I’m sorry that it is ending”*
- J. stated that she *“feels more flexible, more aware of her posture, and imagines that when she holds her head up, it’s “like a string is pulling me up to the ceiling”*
- F. indicated that *“the strength in her legs improved over the course of the training program”*.

Although participants themselves reported physical gains, there were no statistically significant differences between pre and post measures, in part due to the small number of participants who participated in both assessments (N=3). One participant showed a slight improvement in balance and two had lower balance scores in the post-test. In the two-minute march test, which is used to measure aerobic endurance, two participants improved their endurance, while one participant’s score decreased.

*Table 1. Results: Berg Balance Scale (Optimum score – 56)*

<b>Participant</b>	<b>Pre measurements</b>	<b>Post measurements</b>
Participant 1	49/56	39/56 (Medium fall risk)
Participant 2	54/56	56/56 (Low fall risk)
Participant 3	51/56	48/56 (Low fall risk)

*Table 2. Results: Two-Minute March Test*

<b>Participant</b>	<b>Pre measurements</b>	<b>Post measurements</b>
Participant 1	27 steps	21 steps (right knee; stopped at 1:20; had to sit and rest before leaving)
Participant 2	58 steps	63 steps (right knee)
Participant 3	20 steps	23 steps (right knee; stopped at 1:16)

One must be cautious when interpreting the physical measure results. In the current project, the small sample size and numerous confounding variables (e.g., testing at different times of day, other physical activities participants may have been doing during the 12-week period) make it difficult for us to establish any causal relationship between physical attributes such as endurance and balance and dance participation. The purpose of the physical measures used in this pilot was to determine their relative merit as tools for future projects.



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In addition to physical measures, one of the purposes of this pilot was to examine quality of life and social inclusion as a result of engaging in the dance classes. The results were encouraging as participants (who had not all known one another at the start) reported getting together between sessions to practice – an unintended result! Again, their words tell the story:

- F. said that *“I overcame nerves and learned to enjoy performing and gained confidence”* and *“I had not been as social since my husband’s death”*
- R. discussed the social aspect of the dance training: *“Very nice, I wouldn’t have met half of the people”*

In addition, the ballet instructor noted that one of the shy participants seemed to have struck up a new friendship with one of the more outgoing participants in the class, which helped her to be more open in the classes.

### 3.2 Limitations

A number of limitations presented themselves in this pilot project. Most, if not all, can be addressed in future projects.

1. Inconsistent participation made it very difficult to attribute any beneficial effects to participation in the dance classes. For example, one woman could never attend the Thursday classes because of competing appointments. However, she was one of the most enthusiastic participants and noted that she hadn’t been this social since her husband’s death. She was also very enthusiastic about her physical gains. It is possible that, although her participation was restricted to once a week, her positive experiences may have generalized to activity outside of the dance classes.
2. Alternate plans for conducting physical measures had to be made at the last minute before the classes were launched. A Sheridan student in the Bachelor of Health Sciences: Athletic Therapy Program was quickly recruited and conducted both pre and post training measures. It was fortunate that she was able to conduct these measurements, as participants were primed to begin their dance classes; we did not want to delay the start date and possibly lose momentum.

However, the student had very little direction and, for the post training measures, was able to test only three of the participants when she went to Humber Heights. As a result, not all participants completed the pre- and post-training physical measures. The student also had some difficulty with consistency with one of physical measures she used, something that might have been avoided if we had been able to supply her with a mentor who was more familiar with the measures we used. We are grateful to the student for helping us out and, in the future, will build in greater support for the student research assistants.



3. This project was coordinated off site. Had there been a greater presence at Humber Heights, we may have been able to encourage participants to write more regularly in their journals, attend classes, and be available for physical measures and other components of the project. In future iterations of this project we hope to coordinate more closely with a member of the Humber Heights staff to ensure that participants can more consistently attend the classes, perhaps making announcements at breakfasts or putting up posters reminding participants of the date, time, and location of the classes.
4. In the planning stage of this project we attempted to find questionnaires and/or scales that could help us to measure whether participants benefited psychologically from the training program. At the time, we could not find an existing assessment tool that would adequately elicit the type of qualitative data we sought related to quality of life. In future work, we will use both quantitative and qualitative measures of quality of life (existing questionnaires and interviews) to assess dance's impact on psychological wellbeing.

#### 4. Implications for Policy and Research

The following action steps are recommended for moving forward with Schlegel Villages. Prior to outlining recommendations, one discussion that arose during this project was the ethics of offering a service within a research framework and then discontinuing the service once the research has been completed. The Humber Heights participants, while they were well aware that the dance classes would only be offered for 12 weeks, were nonetheless disappointed when they ended and all indicated they would like them to continue.

One participant said that *“If we could consolidate in the company (Schlegel Villages) and have more classes, other people will say “what’s going on?”, will want to join the class, and the dancing will mushroom through all the homes”*.

For this reason the first recommendation is to conduct another series of dance classes at the Village of Humber Heights. This possibility was mentioned to the Activity Director and she was most supportive of continuing the program.

Other recommendations include:

For future studies, include specific cognitive measures. One of the dance teachers included a seated rhythm sequence designed to enhance memory. However, we did not conduct any cognitive testing in this pilot. It seems reasonable to assume, based on anecdotal evidence and the literature, that there is potential for dance to demonstrate cognitive benefits.

In the post dance interviews, two participants made the following remarks that appear to lend credence to the cognitive benefits:



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- E. said he *“Found himself concentrating very hard during the class, in order to do it right”*
  - J. said that *“I have to concentrate and use my mind/head more to watch the teacher, the movements and my feet, and get the movements down to my feet”* and *“After a while the movement became more natural, but it took a while, I couldn’t let my mind wander”*

We also recommend that alternate physical measures and measures of quality of life be explored for future projects.

Consider the space and equipment available for use.

Comments from the participants indicated that the space and equipment made available for the classes were less than ideal:

- *“The equipment and venue were all wrong, not suitable at all, need something quite different”*
- F. said she *“liked the idea of using a barre, chairs are in the way and you can’t see the teacher”*
- *“If we had barres, would be more secure, with a mirror the class would be quicker and more intense”*

We do not know of other venue possibilities at the Village of Humber Heights. However, one action we can take is to purchase portable ballet barres to both add stability and remove obstructions. Participants held onto the backs of chairs for their dance movements and had to negotiate the chair legs, which restricted their movement, especially in the ballet classes. Using barres would also serve to reduce the potential for falls.

Related to the previous comment about space, one suggestion for Schlegel Villages to consider is the construction of multipurpose dance studios in any of its new facilities or when renovating existing facilities. These multi use spaces could be used for other creative and performing arts.

Instruction should be conducted by professionally trained instructors.

Both dance teachers in this pilot are professionally trained. We recommend that professionally trained dance teachers be involved in any future projects. As one participant commented: *“The girls (Paula and Gillian) are good, they know our potential, and try to push beyond, which is good”*. Although Gillian and Paula hadn’t previously taught older adults, they both teach adults in Sheridan’s Music Theatre Program and are very knowledgeable about the principles of adult learning.



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## 5. Conclusions

The results of this exploratory pilot project confirmed our belief that dance has great potential for implementation in retirement residences and long term care homes. Every resident in the post-training interviews expressed interest in participating in another round of dance classes. J. said *“I found it to be an exciting program and I hope something good comes out of it, would join again.”*

In addition to the psychosocial, cognitive and physical benefits, one participant said that *“I’m in a retirement home and am having fun!”*



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## 6. References

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