

Original Article

# Senior dance as a resource of the occupational therapist with older adults: contributions in the quality of life<sup>1</sup>

*A Dança Sênior® como recurso do terapeuta ocupacional com idosos: contribuições na qualidade de vida*

Aline Miotto Nadolny<sup>a†</sup>, Mayara Trilo<sup>a</sup> , Jéssica da Rosa Fernandes<sup>a</sup> ,  
Cecília Sommer Passos Pinheiro<sup>a</sup> , Solena Ziemer Kusma<sup>a</sup> , Taiuani Marquine Raymundo<sup>a</sup> 

<sup>a</sup>Universidade Federal do Paraná - UFPR, Curitiba, PR, Brasil.

<sup>†</sup>In memoriam

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## **Abstract**

This study aimed to analyze and identify possible contributions in the quality of life of older adult participants of senior dance workshops applied as a resource of the occupational therapist. It is an exploratory, descriptive, interventional, longitudinal prospective study with a qualitative and quantitative approach. For the selection of the sample, the elderly were submitted to a cognitive screening through the Mini-Mental State Examination (MMSE), for the analysis of the quality of life, the 36-Item Short-Form Health Survey (SF-36) was applied before and after the workshop. To collect qualitative data, the older adults participated in two focus groups, before and after the workshop. The data were analyzed by descriptive statistics, paired T-test of the difference between two means and content analysis. The workshop was developed over 12 weekly meetings, lasting 90 minutes each. After finishing the workshop, it was observed improvement in the quality of life, with emphasis on the individual averages of the physical aspects (pre-workshop: 69.4, post-workshop: 83.3) and emotional aspects (pre-workshop: 74.1; post-workshop: 96.3). When the Student's T-test was used to compare the means of the group as a whole before and after the workshop, it was possible to note that the domains "functional capacity" ( $p=0.01$ ), "social aspects" ( $p=0.04$ ) and "mental health" ( $p=0.02$ ) presented significant improvement. Therefore, the present study pointed out the benefits of a senior dance workshop being used as a resource for the

1 In memoriam: Aline Miotto Nadolny, the main creator of this project, passionate about Occupational Therapy, dance and Gerontology died a year after the end of the workshop and days after graduation, victim of femicide. It is our simple tribute to her and so many other women whose brilliance we can no longer enjoy.

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occupational therapist with the elderly, and the results obtained lead to the conclusion that the dance workshop contributed to an improvement in the quality of life of elderly people who participated in it.

**Keywords:** Quality of life, Aging, Dancing, Occupational Therapy, Group Practice.

### **Resumo**

Objetivou-se analisar e identificar possíveis contribuições na qualidade de vida de idosos participantes de oficinas de Dança Sênior® aplicadas como recurso do terapeuta ocupacional. Trata-se de um estudo exploratório, descritivo, intervencional, longitudinal prospectivo, com abordagem qualitativa e quantitativa. Para a seleção da amostra, os idosos foram submetidos a um rastreamento cognitivo por meio do Mini Exame do Estado Mental (MEEM), e para a análise da qualidade de vida foi aplicada a avaliação Short Form Health Survey 36 (SF-36) antes e após a oficina. Para coleta de dados qualitativos, os idosos participaram de dois grupos focais, antes e após a oficina. Os dados foram analisados por estatística descritiva, Teste t e análise de conteúdo. A oficina foi desenvolvida ao longo de 12 encontros semanais, com duração de 90 minutos cada. Observou-se, após o término da oficina, melhora na qualidade de vida, com destaque para as médias individuais dos domínios aspectos físicos (pré-oficina: 69,4; pós-oficina: 83,3) e aspectos emocionais (pré-oficina: 74,1; pós-oficina: 96,3). Quando comparadas às médias do grupo como um todo, antes e após a oficina, foi possível notar que os domínios “capacidade funcional” ( $p=0,01$ ), “aspectos sociais” ( $p=0,04$ ) e “saúde mental” ( $p=0,02$ ) apresentaram melhora significativa. Portanto, o presente estudo apontou os benefícios de uma oficina de Dança Sênior® sendo utilizada como recurso do terapeuta ocupacional com idosos, e os resultados obtidos possibilitam chegar à conclusão que a oficina de dança contribuiu para melhora na qualidade de vida dos idosos que dela participaram.

**Palavras-chave:** Qualidade de vida, Envelhecimento, Dança, Terapia Ocupacional, Prática de Grupo.

## **1 Introduction**

Brazil is experiencing a rapid aging process of its population and, according to the World Health Organization, the trend is that the number of elderly people continues to increase (Organização Mundial da Saúde, 2015). In 1940, the Brazilian population comprised 1.7 million elderly people (aged 60 or over), which corresponded to 4.1% of the total Brazilian population; in 2010 that number jumped to 20.6 million (11% of the total Brazilian population) (Camarano & Kanso, 2017). Due to this reality, we carried out research aimed at divulging how these elderly people are aging. According to Belo & Gaio (2007), the older adults have sought to remain active and involved in different activities in different sectors, with a desire to progress, to live new experiences and coexistence, facing possible diseases with a new perspective to allow substantial improvement in the quality of life and its social inclusion, resulting in a more positive culture for aging.

However, the current scenario of population aging presents challenges in different spheres such as economic, political, demographic and social, both for the population and for the government (Camarano & Kanso, 2009; Nalin & França, 2015; Reis et al., 2011). The aging process can be accompanied by significant changes in biopsychosocial aspects, such as changes in organic functions (chemical, physical, cognitive and biological changes), by constant adaptations to new everyday situations (psychological changes) and changes in family and social relationships, for example (Mauritz et al., 2008).

For Witter et al. (2013), aging can produce progressive losses, with an emphasis on organic functions, which can limit the capabilities of elderly people. Among these losses, there is a decrease in flexibility, slowness of movement, reduction of bone mass and muscle composition, problems in the pulmonary and cardiovascular system. Such facts need programs that can reduce the negative impacts of this phase, providing a better quality of life for these people.

Studies carried out by the Institute of Medical Assistance to State Civil Servants (IAMSPE) showed that older adults who practice physical exercises seek less medical care than sedentary ones, demonstrating benefits arising from this practice (Portal Brasil, 2013). Furthermore, when analyzing the relationship between quality of life and physical activity, we conclude that more active elderly people can achieve better mental and physical well-being, greater disposition, better social life, and the reduction of the number of diseases and comorbidities (Souza & Metzner, 2013). In this direction, one of the activities that contributes to both socialization and health, to self-esteem and to the quality of life is dance (Cassiano et al., 2009). According to Witter et al. (2013), through dance it is possible to express movements and arouse emotions. This study will highlight the technique of Senior Dance®.

Senior Dance® was developed in Germany in 1974, under the leadership of Ilse Tutt, and the National Senior Dance Federation was founded in Germany in 1977. The following year, in 1978, Christel Weber brought Dança Senior® to Brazil. In 1982, the technique started to be applied at Ancianato Bethesda, giving rise to the Senior Dance Association in 1993, based in Pirabeiraba - Santa Catarina (Cassiano, 2018). Senior Dance® is a playful activity, composed of different choreographies, with simple and rhythmic movements driven by folk songs. It is considered as a strategy for preventing inactivity, socializing and promoting quality of life in aging. Most of the time, it is applied in a circle, reliving childhood songs and cirandas (Franco et al., 2016; Cassiano, 2018).

Dancing can bring benefits such as improved motor and muscle control, cardiovascular resistance and consequent improvement in respiratory rate, range of motion, stimulation of cognitive functions, such as focused attention, cognitive flexibility and working memory (necessary to learn new steps and perform movements coordinated and repeated), among others (Souza & Metzner, 2013; Witter et al., 2013). The Senior Dance® does not require intense efforts; however, it does require balance, range of motion, motor coordination and cognitive ability (Franco et al., 2016; Cassiano, 2018).

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working memory (necessary to learn new steps and perform movements coordinated and repeated), among others (Souza & Metzner, 2013; Witter et al., 2013). With regard to Senior Dance®, it does not require intense efforts, however, it does require balance, range of motion, motor coordination and cognitive ability (Franco et al., 2016; Cassiano, 2018). In addition, according to Cassiano (2018, p. 168-169), the differential of Senior Dance® “is that it can be adapted, enabling the socialization of the older adults with different functional conditions, wheelchair users and people with gait and balance limitations”.

Through dance groups, the elderly population develop new skills and new life projects, having the opportunity to reflect on the aging process, and becoming a space for exchanging experiences, knowledge, and recognition (Cardoso et al., 2002; Belo & Gaio, 2007; Cassiano et al., 2009; Souza & Metzner, 2013). Also, another benefit of participating in activities that involve dance is related to being in a group, favoring the promotion of quality of life by allowing socialization, creating bonds and expanding the universe of the elderly population. According to Soeiro (2015), the practice of dance has a positive influence on the interaction and intimacy of those who practice it. For Toldrá et al. (2014), groups are a possibility to stimulate a healthier social life, being a vehicle for health education since they generate a space for the care and sharing of change needs, which favors the understanding of the different ways of dealing with the aging process.

The use of groups with the elderly population by occupational therapists has been increasingly used as an important and effective intervention practice. For Maximino (1995), groups can be described as a “sounding board”, in which the singularities of each individual are experienced within the group plot, in which each becomes significant with the other, becoming a vehicular network (Brunello, 2002). Through group practices, the occupational therapist can seek to strengthen and develop the functional capacity of the older adults, using their bodies as a therapeutic resource (Fleury & Gontijo, 2006).

According to Garcia & Garros (2017, p. 45), the differential of the occupational therapist than other professionals using the dance as a resource with the older adults is the perception that this is not just a sequence of synchronized movements to improve skills, but:

It is a process with meanings, which go beyond active joint mobilization, going through a situation of bodily mobilization, activated by the auditory sensory system, through music, which triggers adaptation of rhythm, movement, and posture and also brings up affective memory associated with music from a stage in the life of the older adult.

In this sense, the authors reinforce that to happen effectively, an analysis of complex activity (an essential tool of the occupational therapist) is necessary, aimed at the target population, considering the components, skills, and techniques involved, allowing necessary adaptations according to the age group, and favoring the participation of the older adults (Garcia & Garros, 2017).

Fleury & Gontijo (2006) emphasized that Occupational Therapy seeks to integrate medical and social knowledge with artistic and practical aspects of activities, using them

as a resource to help the individual achieve the maximum of their functionality and independence. According to the authors, specifically in the field of geriatrics and gerontology, the occupational therapist will seek to enhance the remaining capacities of the elderly people, respecting their limitations, and through dance, they will be able to provide several ways of “expressing, creating and acquiring new consciences”, focused on the quality of life (Fleury & Gontijo, 2006, p. 85).

In this context, the practice of physical and bodily activities directed by occupational therapists, such as dance, becomes extremely important to guarantee more active aging and with a better quality of life for this growing age group, and providing opportunities for participation, considering what is culturally relevant for the older adult. Therefore, this study aims to analyze and identify possible contributions of Senior Dance® to the quality of life of the older adults, applied as a resource for the occupational therapist.

## **2 Method**

This is an exploratory, descriptive, interventional, longitudinal prospective study with a qualitative and quantitative approach. The Research Ethics Committee of the Federal University of Paraná approved it on November 20, 2017, under opinion 2,387,307. Data were collected between March and June 2018.

The inclusion criteria used in the selection of participants were: older adults (aged 60 years old or over), both genders, and who could answer the Mini-Mental State Examination (MMSE) with autonomy.

The recruitment of participants took place through dissemination carried out in projects of the Federal University of Paraná - UFPR - aimed at the elderly population and in the means of disclosure of this same university (digital media - electronic mail). The contact between the interested parties and the researchers took place through e-mail and telephone provided in the disclosure.

The effectiveness of the participation was conditioned to a selection process and the subsequent signing of the Free and Informed Consent Term under the provisions of CNS Resolution 466/2015. Each participant had an identification number to guarantee the anonymity of the data collected. The study was registered in the Brazilian Registry of Clinical Trials (REBEC) under the number RBR-6vp3hq.

To meet the selection criteria, participants underwent the Mini-Mental State Examination (MMSE). The cut notes used were based on the study by Bertolucci et al. (1994): 13 points for illiterate and elderly people with one to four years of school, 18 points for five to eight years of school and 26 points for nine or more years of school. Higher scores indicated higher cognitive performance (Folstein et al., 1975).

The meetings started after the selection process. At first, the project and its objectives and expected results were presented. a socioeconomic questionnaire collected the data related to the characterization of the sample. To identify the participants' previous or not contact with the dance, a pre-workshop questionnaire was applied. This is a semi-structured questionnaire with three open questions, which aims to know the type of relationship and contact that the interviewee has or had with the dance throughout his life and if he has or has had the habit of performing physical activities. The questions are easy to understand, seeking the understanding of all participants, for succinct answers.

To analyze the quality of life of the participants before the workshop, we applied the Quality of Life Assessment Questionnaire (SF-36). SF36 is a multidimensional, self-administered questionnaire, translated and validated in Brazil by Ciconelli et al. (1999). This questionnaire consists of 36 items, including 8 scales or components, which are: functional capacity, physical aspects and pain, general health status, vitality, social aspects, emotional aspects, mental health and one more question of comparative evaluation between the current health conditions and the condition of one year ago. SF-36 scores range from 0 to 100, with zero correspondings to worse health and 100 to better health (Ciconelli et al., 1999). The data were analyzed with the support of the SF36 + application.

At the first meeting, a focus group was held, which is defined as a technique used to bring participants together with the researcher and, based on the dialogue, to discuss/debate a pre-defined topic. The objective of using this strategy was to verify the expectations for the workshop, the perception of the participants in this practice and the benefits they believed that the dance would bring to their lives in all physical, social and emotional aspects. The survey of the participants' perception of dance was necessary for the organization and planning of the workshops, besides allowing the researchers to know the previous relationship and the expectations of the participants regarding this resource. The questions that guided the focus group were: 1) In your view, what are the benefits of dancing?; 2) What do you expect from this group?

At the subsequent meeting, the Senior Dance® workshop began weekly for 10 weeks, lasting 90 minutes each session. The workshop's summary schedule is shown in Table 1.

Senior Dance® was selected as the main technique for this study because it provides benefits not only physical, such as mobilization, flexibility, and motor coordination, but also cognitive (attention, memory...), emotional and social, as it favors interaction and a feeling of belonging. Senior Dance® is a mediator of human relationships, considered as a leisure/recreation activity that creates a space of enriching experiences (Cassiano et al., 2009). It has choreographies with simple steps, both standing dances, and dances performed by the elderly sitting, which allows better participation of individuals with reduced mobility (or cognitive ability). We also used circular dance choreographies, with more complex dances and other experiences of corporal practice, such as relaxation, stretching, rhythmic games, free dance, among others.

At the end of each session, the participants answered a questionnaire with open questions, related to their workshop. The questionnaire aimed to ascertain the possible benefits of each intervention.

**Table 1.** Schedule of the Senior Dance® Workshop for the older adults.

MEETINGS	ACTIVITIES
Selection of Candidates	Presentation of the project and evaluation for pre-selection.
Project opening	Project presentation; clarification of doubts; assessments and focus group; coffee.
1st meeting	Stretching with seated participants; socialization dynamics with music (participants in a circle) and choreographies of Senior Dance: Welcome, Mexican Waltz and Blues in the circle; post-workshop assessment and coffee.

**Table 1.** Continued...

2nd meeting	Stretching with seated participants; dynamics of body awareness with music, directed movements followed by free dance; Senior Dance choreographies: Vilma Stomp; Waltz of the scarves (with colored scarves); Italian with bottles and Blues in the circle; post-workshop assessment and coffee.
3rd meeting	Stretching with seated participants; Geronto-activation movements: (rhythm activity and motor coordination with decorated bottles); Senior Dance choreographies: Happy circle, Italian with bottles and Mexican Waltz.
4th meeting	Stretching with seated participants; Senior Dance choreographies: Senior Mixer; Casatsckok and Happy circle; experience for body awareness (with quiet music, commands referring to the body structure with the intention of relaxation); post-workshop assessment and coffee.
5th meeting	Stretching with seated participants; free dance dynamics in pairs with balloons; Senior Dance choreographies: Sigh and seven hops; breathing/relaxation technique (with quiet music); post-workshop assessment and coffee.
6th meeting	Stretching with seated participants; Hugging dynamics (music with body commands); choreographies of Senior Dance: Hunters march; Happy circle and Mexican Waltz; post-workshop assessment and coffee.
7th meeting	Stretching with seated participants; Choreographies of Senior Dance: Sticks dance, Serenade, and Italian with bottles (bottles decorated by the elderly participants); post-workshop assessment and coffee.
8th meeting	Stretching with the participants seated and standing; Circular Dance choreographies with a guest teacher; post-workshop assessment and coffee.
9th meeting	Stretching with seated participants; body experience with music for warm-up; choreographies of Senior Dance: Sticks dance; Gypsy polka and Serenade. Experience for relaxation and body awareness (with quiet music); post-workshop assessment and coffee.
10th meeting	Stretching with seated participants; choreographies of Senior Dance: Hunters march; colorful plates and Blues circle; embracing dynamics (repeated at the request of the participants); post-workshop assessment and coffee.
11th meeting	Stretching with seated participants; warm-up dynamics; choreographies of Senior Dance: Mill dance; Gypsy Polka; Casatschok; Seven hops and Happy circle; breathing/relaxation technique; post-workshop assessment and coffee.
Ending	Reassessment, focus group and coffee.

Source: The authors, 2018.

After the end of the workshop, the participants were again evaluated to verify the contribution of dance to their quality of life. The evaluations took place through the reapplication of the SF-36 and focus group. At that time, the focus group aimed to identify possible benefits acquired after all the proposed activities, as well as to analyze the perception of the older adults in their performance and the biggest barriers and facilitators encountered during the workshop. The guiding questions of this focus group were: 1) In your view, what benefits did the dance workshop bring to you and your daily life?; 2) How were the group dance experiences?; 3) What changes (physical, psychological, social) did you notice after we started the dance workshop?

Regarding data analysis, the qualitative data from the pre-workshop questionnaire, Bardin's content analysis (AC) technique (Bardin, 2011) analyzed the post-workshop questionnaires and data related to the focus groups.

The descriptive statistics method assessed the data obtained through the socioeconomic questionnaire and the SF-36, as well as the quantitative data from the post-workshop questionnaires. The Student's t-test (parametric) and Wilcoxon test (non-parametric) performed the comparison between the responses attributed to SF-36 before and after the sessions. The SPSS software was used for analysis. The following hypotheses were tested:  $H_0: \mu_1 - \mu_2 = 0$ ;  $H_1: \mu_1 - \mu_2 < 0$ , where  $\mu_1$  is the average of the responses of all individuals to the eight domains of the questionnaire before treatment and  $\mu_2$  refers to the average of the responses of all individuals to the eight domains, after the workshops. The first hypothesis considered that the average before and after the workshops would be the same, that is, that the intervention would not affect. However, the second hypothesis considered that the average after the intervention was higher. A significance level of 5% was adopted for comparison.

### **3 Results**

Due to infrastructure issues, the dance workshop offered 16 places. Sixteen elderly people enrolled in the workshop who underwent the MMSE (selection criteria). All interested parties reached the cut-off point, according to their education level, and were considered able to participate in the group. During the first workshops, there were dropouts, for reasons of health, change of city and exclusions due to absence criteria. Thus, the final sample was composed of nine older adults.

#### **3.1 Sample characterization**

Nine older adults participated in the study, one man and eight women, aged between 60 and 79 years old, with a mean age of 67.88 (SD = 6.47). Of these participants, 55.5% were married, 44.4% had completed higher education and 33.3% had an income of one to three minimum wages and the same amount had an income of five wages or more. Regarding health conditions, 55.5% of the participants reported having arterial hypertension, 22.2% reported having Musculoskeletal Diseases and 11.1% reported having Diabetes Mellitus.

In a questionnaire carried out before the beginning of the workshop, the participants were asked about previous experiences with dance classes, about physical activities already carried out and about musical preferences and various courses they had already taken. In this questionnaire, they also had to give a score from 0 to 10 for how they were feeling physically, emotionally and socially. Of the total, 88.8% of the elderly participants never took dance classes, and 100% reported that they have already done or do any physical activity. Most of the physical activities cited were walk or have already walked with 66.6%, water aerobics with 33.3%, and weight training with 44.4%. The scores given to how they feel physically showed that 33.3% gave a score of 8 and the same percentage assigned a score of 9 for how they have been feeling emotionally. Regarding how they feel about emotional aspects, 44.4% rated it with 10.

### 3.2 Pre-workshop focus group

The perception of the older adults on the dance was evaluated through a focus group, in which they valued the interaction and the stimulation of a dialogue between the participants. After transcription and a floating reading, the results were grouped into six thematic categories: “dance benefits for the body functions and motor skills”, “dance benefits for the mental functions and process skills”, “dance benefits for the socialization”; “dance benefits for self-esteem”, “feelings” and “challenges”.

Regarding the dance benefits for the body functions and motor skills, the participants believed in the potential of this activity for improving motor coordination, stability, joint mobility, energy, and disposition.

*I think this focus and balance issue is very important, even because of labyrinthitis and more, and also concentration (Participant 4).*

*I think the dance will help me balance (Participant 6).*

In the dance benefit for the mental functions and procedural skills, the elderly people believed that it contributed to an improvement in the levels of attention, concentration/focus, and memory.

Furthermore, the socialization resulting from the participation in a dance group was the main benefit reported by them, which is clear in some of their statements:

*I think the group will be good for me and will help me a lot in many things, mainly for friendships because I like to have friends a lot and I'm a bit quiet (Participant 8).*

*I stayed at home for a long time because of my mother's health, I took care of her so now that I'm starting to go out, the socializing will be good for me, not to mention the pleasure that I will feel, the physical and mental benefits. It will also be good at everything, mainly because now I am going out and looking for external things; I was very much in a shell (Participant 1).*

*I also think it will help me a lot because I like dancing and I am also very shy and it will also help me to loosen up a little more (Participant 9).*

When asked about the dance benefits for the self-esteem and the challenges it provides, the participants believed that performing this activity would increase self-esteem and related it to pleasurable things.

*I see the issue of self-esteem a lot in this relationship, which is the pleasurable, not overwhelming relationship (Participant 4).*

*I think I need to help my self-esteem, which is very low (Participant 6).*

Regarding the challenges that dance provides, the participants reported that motor coordination would be challenging.

*I was unable to coordinate the left and the right (Participant 4).*

*For me, coordination is a challenge because everything I do with my foot I cannot do with my hand (Participant 3).*

### 3.3 Workshop sessions and participants' perceptions

After each session, the participants were asked how they felt during the session. Throughout all meetings, all participants reported feeling good. During the sessions, the difficulty in controlling the steps and coordination stands out, and in a workshop, there were reports of pain. In the analysis of the results, the reports of the absence of difficulty increased during the workshops (Table 2). In the first meeting, 33.3% of the participants reported the absence of difficulty and in the last meeting, 99.9% reported not having difficulties (Table 2). The improvement in concentration and memory, movement/exercise of/with the body, socialization, improvement in mood, balance, coordination, agility (Table 2) stand out among the benefits cited. All participants reported some benefits.

**Table 2.** Detail of the post-workshop analysis.

<b>1<sup>st</sup> meeting</b>	<b>N</b>	<b>Difficulties</b>	<b>%</b>	<b>Benefits</b>	<b>%</b>
	9	Loss of balance	11.1	Coordination	11.1
		Control and change of steps	22.2	Concentration and memory	22.2
		Coordination	22.2	Exercise the body	11.1
		Due to overweight	11.1	Socialization	22.2
		Due to pain	11.1	Not yet noticed	22.2
		Absence of difficulty	33.3		
<b>2<sup>nd</sup> meeting</b>	<b>N</b>	<b>Difficulties</b>	<b>%</b>	<b>Benefits</b>	<b>%</b>
	9	Loss of balance	11.1	Concentration and memory	11.1
		Control and change of steps	11.1	Exercise the body	22.2
		Coordination	22.2	Socialization	11.1
		Due to pain	11.1	Balance	11.1
		First contact with dance	11.1	Happy mood - feel good	11.1
		Absence of difficulty	33.3	Self-esteem	22.2
				Not yet noticed	11.1
<b>3<sup>rd</sup> meeting</b>	<b>N</b>	<b>Difficulties</b>	<b>%</b>	<b>Benefits</b>	<b>%</b>
	9	Control and change of steps	11.1	Coordination	44.5
		Coordination	11.1	Concentration and memory	22.2
		Due to pain	22.2	Exercise the body	22.2
		Absence of difficulty	55.6	Socialization	11.1
<b>4<sup>th</sup> meeting</b>	<b>N</b>	<b>Difficulties</b>	<b>%</b>	<b>Benefits</b>	<b>%</b>
	9	Control and change of steps	22.2	Concentration and memory	11.1
		Coordination	22.2	Exercise the body	33.4
		Concentration	11.1	Socialization	11.1
		Absence of difficulty	44.5	Balance	22.2

**Table 2.** Continued...

				Happy mood - feel good	22.2
5 <sup>th</sup> meeting	N	Difficulties	%	Benefits	%
	9	Control and change of steps	11.1	Coordination	11.1
		Coordination	11.1	Concentration and memory	22.2
		Absence of difficulty	77.8	Exercise the body	22.2
				Socialization	11.1
				Agility	33.4
6 <sup>th</sup> meeting	N	Difficulties	%	Benefits	%
	9	Control and change of steps	11.1	Coordination	22.2
		Coordination	11.1	Concentration and memory	11.1
		Due to pain	11.1	Socialization	11.1
		Absence of difficulty	66.7	Balance	11.1
				Happy mood - feel good	11.1
				Agility	33.4
7 <sup>th</sup> meeting	N	Difficulties	%	Benefits	%
	8	Loss of balance	25.0	Coordination	3.5
		Control and change of steps	12.5	Exercise the body	37.5
		Due to pain	12.5	Socialization	12.5
		Absence of difficulty	50.0	Agility	12.5
8 <sup>th</sup> meeting	N	Difficulties	%	Benefits	%
	9	Control and change of steps	22.2	Coordination	11.1
		Coordination	11.1	Concentration and memory	22.2
		Concentration	11.1	Exercise the body	11.1
		Absence of difficulty	55.6	Balance	11.1
				Happy mood - feel good	33.4
				Emotional control	11.1
9 <sup>th</sup> meeting	N	Difficulties	%	Benefits	%
	9	Control and change of steps	11.1	Coordination	11.1
		Remember the steps (memory)	11.1	Exercise the body	33.4
		Absence of difficulty	77.8	Balance	11.1
10 <sup>th</sup> meeting	N	Difficulties	%	Benefits	%
	9	Control and change of steps	44.4	Coordination	11.1
		Absence of difficulty	55.5	Exercise the body	22.2
				Balance	11.1
				Happy mood - feel good	55.5
11 <sup>th</sup> meeting	N	Difficulties	%	Benefits	%
	9	Remember the steps (memory)	11.1	Balance	11.1
		Absence of difficulty	88.9	Happy mood - feel good	55.5
				Exercise the body	33.3

Source: The authors, 2018.

### 3.4 Comparison of quality of life before and after the workshop

Based on a descriptive analysis of the answers of the participants in the SF-36, there were higher averages before the workshop attributed to the domains of social aspects ( $M = 76.4$ ) and emotional aspects ( $M = 74.1$ ). However, by the variation between the minimums and maximums, as well as the standard deviation of the participants' answers (social aspects - minimum = 25.0, maximum = 100.0 and  $SD = 26.2$ ; emotional aspects - minimum = 0.0, maximum = 100.0 and  $SD = 43.4$ ), it is not possible to state that everyone had a good perception of their quality of life in these aspects.

However, lower averages but good were attributed to the domains vitality ( $M = 60.6$ ) and general health status ( $M = 62.7$ ). The minimums and maximums and the standard deviation showed less variation when compared to the domains of higher averages (vitality - minimum = 45.0, maximum = 75.0 and  $SD = 12.9$ ; emotional aspects - minimum = 32.0, maximum = 82.0 and  $SD = 16.6$ ); however, they are still considered high and it is impossible to generalize the answers.

After the workshop, the highest averages were attributed to the emotional ( $M = 96.3$ ) and physical ( $M = 83.3$ ) aspects and the lowest averages were attributed to the vitality ( $M = 62.8$ ) and mental health ( $M = 68.9$ ). There was also a reduction in the SD of the answers of the participants to each domain when compared to the pre-workshop stage (before the workshop, the SD ranged from 12.9 to 43.4 and, after the workshop, it varied from 8, 8 to 28.0). However, when analyzing the total individual averages of the participants, there was a reduction in the average presented by three participants (P2, P4, and P8) and an increase in the average of the others, when compared to the pre-workshop averages.

Due to the number of study participants, we performed a statistical analysis of the averages assigned by participants to each of the SF-36 domains before and after the workshop. However, in simple analysis, there was an improvement in the mean of the domains of physical aspects (pre-workshop: 69.4; post-workshop: 83.3) and emotional aspects (pre-workshop: 74.1; post-workshop: 96.3).

Also, we carried out statistical tests. At first, we performed a Student's t-test to compare the averages of the group as a whole. In this test, the domains "functional capacity" ( $p = 0.01$ ), "social aspects" ( $p = 0.04$ ) and "mental health" ( $p = 0.02$ ) showed significant improvement than the answers of the group as a whole before and after the intervention (Table 3).

**Table 3.** Comparison of group averages as a whole.

DOMAIN	N	Correlation	p-value
Functional capacity	9	.907	.001
Limitation due to physical aspects	9	-.025	.949
Pain	9	.188	.629
General health status	9	.297	.438
Vitality	9	.179	.644
Social aspects	9	.688	.041
Limitation due to emotional aspects	9	-.224	.563
Mental health	9	.723	.028

Source: The authors, 2018.

However, a non-parametric test comparing the individual averages of each participant before and after the intervention showed significant differences. Regarding the “functional capacity” domain, five participants showed an improvement, while for two participants, there was a worsening; in the “limitations due to physical aspects” domain, there was an improvement for three participants and worsening for two; as for the “pain” domain, four participants had better scores and the same number had worse scores; in the domain “general health status”, four participants showed improvement and three of them showed worsening; in the pain domain, four participants had better scores in the “vitality”, and the same number had worse scores; as for the “social aspects”, two participants improved their scores and three worsened them; in the “limitations due to emotional aspects” domain, three participants had better scores and one showed a reduction in them; finally, in the “mental health” domain, five participants showed an improvement, while three participants had a reduction in their score. Although statistically, the results do not seem significant, the short intervention period of 12 weeks and the target population that tends to have a worsening in the quality of life over the years due to the natural aging process should be considered.

### 3.5 Post-workshop focus group

After the end of the workshop in the focus group, data were collected about the perception of the elderly participants in the benefits, changes, barriers, and facilitators during their participation. The group's results were grouped into four thematic categories: “dance benefits for body functions and motor skills”, “dance benefits for mental functions and process skills”, “dance benefits for socialization” and “dance benefit for self-esteem”.

When analyzing the benefits of dance for body functions, including emotional aspects and motor skills, the participants brought positive results to the improvement in balance and coordination, and one participant pointed out the importance and the need to perform physical activities.

*For me, I think the emotional is the most important and I want more, it has to be one year to trigger another, so there should be more. Part of the coordination too, we have to be smart otherwise we make mistakes (Participant 1).*

*The change for me was the psychological one if I cried or smiled the important thing is what emotions I experienced [...] the psychological was all good (Participant 3).*

For me, the balance was the first thing that I felt different because I had little balance, you know, now I can climb on a stool to look at some things always holding something (Participant 6).

*Not to mention the physical part, because as the city is very cold here, 154 days a year it rains (laughs), we are not always able to walk, so as a physical exercise, like leisure, meeting new people was quite interesting and rewarding (Participant 1).*

Socialization was again one of the points most addressed by the participants. Benefits related to self-esteem were also mentioned, and the potential of dance to stimulate mental functions and procedural skills. Memory and attention were the most cited.

*Meeting new people was very interesting and rewarding (Participant 1).*

*I made so many friends, and even the girls bring that freshness of youth (laughs); very nice to live with young people (Participant 6).*

*What I found interesting is that practically throughout the course, all classes were not the same pair, the dance made you change pairs, then you meet all the people, you end up interacting with all of them, this is cool really (Participant 1).*

*Memory, it all goes into people's lives, you take other things that you will do, you do other things with more attention (Participant 6).*

*Mainly attention, because we are used to doing everything automatically, right, and there, you have to pay attention, memorize, see the exercise, look at everything (Participant 5).*

*Memory helped a lot, it seems that the brain wakes up, for me, I felt it (Participant 8).*

*It helped me a lot even in shyness (laughs), it helped me a lot (Participant 9).*

*I liked the dance a lot, I am also like the "participant 9", a shy and introspective person, and I enjoyed being here (Participant 2).*

#### 4 Discussion

This study aimed to verify the contribution of the dance to the quality of life of older adults before and after a Senior Dance<sup>®</sup> workshop. According to Ferreira et al. (2017), as much as the concept of quality of life is considered multidimensional, in this study, some social determinants and health influence people's quality of life, especially the elderly people. The results showed benefits from the practice of Senior Dance<sup>®</sup>, both in the quality of life in general and in aspects such as motor skills, emotional aspects, mental functions, procedural skills, as well as in the socialization of the elderly population who participated. Thus, Senior Dance<sup>®</sup> in this study was a therapeutic resource and an important cultural experience for the elderly participants.

One of the objectives of the National Health Policy for the Elderly (PNSPI) (Ordinance No. 2,528, of October 19, 2006) is "to recover, maintain and promote the autonomy and independence of the elderly, directing collective and individual health measures to that end, in line with the principles and guidelines of the Unified Health System (SUS)" (Brasil, 2006; Brasil, 2010, p. 23). In this sense, the programs developed for the elderly should involve spaces not only for prevention and rehabilitation, but also to encourage leisure, sports and other physical activities that have an effect on the quality of life of the elderly and encourage their social participation.

In a study by occupational therapists with a group of twenty elderly people aged between 65 and 84 years old participating in an extension project, after one year of Senior Dance® practice with weekly frequency and lasting one hour, there were benefits of this practice in the physical activities, in leisure, in games, in cognitive stimulation, in the development of motor coordination, in self-esteem and socialization. Consequently, these gains enabled the perception of improvement in the participants' quality of life. According to the observations of the authors of the study, Senior Dance® can be used to facilitate socialization, body knowledge, stimulate creativity, among other skills (Cassiano et al., 2009).

Another study also carried out by occupational therapists but with elderly people attending a Basic Health Unit and with a different methodology than the one used in this research (WHOQOL-100 was used to assess the quality of life) pointed out the benefits of dance perceived by participants for their quality of life. According to the authors, even though there was no significance in the statistical results, changes were perceived by the participants, especially in the aspects of socialization, self-perception, and satisfaction (Garcia & Garros, 2017).

In the research by Soeiro (2015) carried out with elderly people who have been practicing dance for some time (between six and ten years), although the author used a questionnaire for assessing the quality of life (WHOQOL-Bref) different from the one used in this study, the results also indicated benefits of dance practice in the quality of life of the elderly participants, especially in the physical, psychological, social relationships and environment. Delabary et al. (2016) identified in their study that, after 30 dance sessions, the sample achieved significant improvement in seven of the eight domains of quality of life. The only domain that did not show significant improvement was general health.

A positive aspect of using Senior Dance® as a resource in workshops is that it does not need special equipment with a lot of technology, regardless of socioeconomic status, and can be carried out in the community, nursing homes and institutions. For most of the elderly participants, dance is considered an attractive form of exercise; however, it is not a practice widely used by them (Marks, 2016). According to the questionnaire applied before the beginning of the sessions, 88.8% of the nine participants reported never having taken dance lessons, yet all expected to have benefits throughout the workshop and related it to a pleasant and self-esteem activity. For Fong Yan et al. (2018), the pleasure that dance provides offers an additional advantage, which is greater participation and adherence to group sessions, which is an essential feature to obtain a better long-term benefit. Even with the withdrawal of the participants, those who made up the final sample were present, practically, in all sessions.

Regarding the presence of musculoskeletal diseases, 22.2% of the participants reported having them; however, they did not impede participating in the workshops and performing the dances. According to Marks (2016), this fact can be explained because according to the author, dance can be less harmful to the joints than ordinary high-intensity exercises. Besides aerobic improvement, it benefits the physical health of the participant in pain, promoting greater independence and well-being. Accordingly, Maciel (2010) explains that the elderly population should be encouraged to practice

physical activities capable of promoting the improvement of their health. In this study, as an activity that integrates the intentional coordination of body movements, the Senior Dance® became an important ally for the participants' health.

According to the reports of the elderly participants, there were beneficial effects brought by dance for neuromuscular activation, improvement of balance and body posture, as well as for agility. In the study by Fong Yan et al. (2018), participants reported improvement in gait, and a reduction in the risk of falls was found. Other studies point to increased physical strength, improved motor coordination, weight loss, reduced fatigue, and pain, improved functional capacity, increased strength, agility, aerobic endurance, flexibility and improved performance of daily life activities (Oliveira et al., 2009; Andrade & Furtado, 2012; Silva & Berbel, 2015; Delabary et al., 2016).

Also, according to Fong Yan et al. (2018), the performance of regular, structured dance activities and those performed in this workshop is considered equal or even more effective than other types of structured exercises, improving several issues related to health and emotional state, recommended by health professionals as safe and effective activities. As a complement, in a systematic review carried out by Venancio et al. (2018), the survey of 12 articles identified positive impacts from the practice of Senior Dance®, such as the improvement in cognitive performance, balance, quality of life, socialization, mood and pain reduction.

In this study, as previously mentioned, through the results obtained by applying the SF-36 and the focus groups and the reports of the older adults in each workshop, we verified an agreement with the authors mentioned, considering that the dance showed beneficial results for both health and emotional aspects.

The use of music was another point analyzed with a great impact during the dances. Many reports brought by the participants reflected cultural aspects and memories that the songs brought to them, which involved many feelings, pleasure and a sense of well-being. Many of them reported at the end of the workshop that the music of a particular dance made all the difference in their movements and that, afterward, they would remember and dance in their homes.

According to Gomes & Amaral (2012), music brings benefits, such as psycho-emotional, physical and social improvement and, consequently, contributes significantly to self-esteem and socialization. In Soeiro's study (2015, p. 25), three participants identified music as an “especially significant” element in their lives and pointed out that, during dance classes, music enabled contact with the past and a “spiritual elevation”.

Literature pointed out that the use of music with the elderly helps them to rediscover songs/melodies that were or are still part of their sonorous-musical life, which helps to rescue the individual's sound identity, increasing self-love and self-confidence. When music accompanies the aging process, marking social times and events, allows memories that link personal and non-transferable experiences to social and collective experiences. Thus, the older adults rescue something that may have been altered or lost by the natural aging process or by some pathological process (Gomes & Amaral, 2012).

One of the most difficulties during the participation in the workshop by the elderly was the control and the exchange of steps, which, according to Machado et al. (2017), is associated with the fact that the human body needs a system to control and coordinate the body's actions so that it can achieve effective movement. According to the authors, dance allows the body and neuromotor patterns of laterality and Spatio-temporal orientation to be adjusted throughout the sessions, and for difficulties to be reduced, as observed during the workshops.

Also, the sessions of the Senior Dance® workshop covered choreographies to stimulate the recent memory of the participants, as they needed to perform movements forward, backward, in circles and pairs, usually through repeated sequences and that required quick adjustments by the execution of the steps. Dancing stimulates the ability of the elderly to store and retrieve choreographies and follow the verbal commands of the instructors. The participants needed to maintain focused attention and make the planning to learn the sequence of steps and then put them into practice.

Oliveira et al. (2009) reported that the practice of dance provides good cognitive and behavioral responses, favoring body awareness, avoiding social isolation and providing more willingness to participate in other social activities, contributing to general well-being and consequently to the quality of life of the elderly population.

In addition to the potentials of dance as a therapeutic resource evidenced in this study, the fact that the workshop is in a group favored socialization and well-being, allowing the exchange of experience between the participants. The socialization resulting from the participation of a dance group was also evident in the study by Andrade & Furtado (2012). According to the authors, socialization was evident, as new friendships emerged and there was an improvement in the mood of the participants and feelings of joy and happiness.

In another study, it became evident that the use of group dances helps the elderly participants to acquire greater cultural awareness, considering that when dancing we need to understand the meaning of the movements adopted, which come from the cultural heritage, taking up different world cultures and their rhythms, choreographies, and meanings (Fleury & Gontijo, 2006).

One of the challenges of the researchers during the workshop was the participants' absences and dropouts. Studies pointed out the proportion of lost participants as an important aspect to be studied to have a reflective analysis of how much the average time to have a positive intervention would be (Fong Yan et al., 2018).

## **5 Conclusion**

This study showed the benefits of a Senior Dance® workshop used as a resource for occupational therapists with older adults. The results obtained by standardized evaluations and by the participants' report proved to be beneficial. The search for a better quality of life was punctuated by the elderly participants through a triad composed of physical, social and cognitive benefits, showing improvements reported by the participants in all these fields. A total result is not guaranteed with only one of these three pillars, but with a mix of all. Due to all the positive reports brought by the

participants, we concluded that the dance workshop can improve the quality of life of the elderly population who regularly participate in it.

As a routine for practitioners, dancing can bring several benefits, such as improved balance, motor coordination, improved socialization, and self-esteem. Also, dance is a physical activity that brings satisfaction to those who perform it, which has been proven with the elderly practitioners of the Senior Dance® workshop.

Some difficulties were observed throughout the workshop such as the absences and dropouts of the participants, often justified by health problems and constant medical routine.

Through the data obtained with this Senior Dance® workshop, we suggest to carry out further studies with a larger number of participants to identify the specific contributions of dance to the different aspects of the quality of life of those who practice it.

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### Author's Contributions

Aline Miotto Nadolny – She was responsible for the idea, construction of the study and design of the text. She organized the sources, conducted the dance workshops and the entire data collection process, data analysis, writing and review of the text. Mayara Trilo – She was responsible for the idea, construction of the study and design of the text. She organized the sources, compiled and analyzed the data, and wrote and reviewed the text. Jéssica da Rosa Fernandes – She was responsible for the idea, construction of the study and design of the text. She organized the sources, assisted in conducting the dance workshops, performed the data collection and analysis, writing and review of the text. Cecília Sommer Passos Pinheiro – She assisted in the construction of the project, specifically in the proposal of the workshops. She also assisted in the process of conducting the dance workshops and in the data collection, in the writing and review of the text. Solena – She assisted in the construction of the methodology and the analysis of the study data, specifically in the statistical analysis. She also

assisted in writing and review of the text. Taiuani Marquine Raymundo – She was responsible for the orientation of the study, assisted in the construction and execution of the entire project. She contributed to the process of holding dance workshops, collecting and analyzing data, writing, and review of the text. All authors approved the final version of the text.

**Corresponding author**

Taiuani Marquine Raymundo  
e-mail: taiuani@ufpr.br