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Original Article
Artigo Original

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Quantitative and qualitative assessment of body balance in active elderly women and their relation to health in general

Avaliação quantitativa e qualitativa do equilíbrio corporal em idosas ativas e sua relação com a saúde no geral

Keywords

Postural Balance
Aging
Dizziness
Exercise
Quality of life

ABSTRACT

Purpose: to analyze the postural balance of independent elderly women and their relation with aspects of health, ages and quality of life. **Methods:** a total of 44 independent elderly women, classified according to the scales: Index of Independence in Daily Life Activities (DLA) and Instrumental Activities of Daily Life (IADL), aged 70.5 years (+6.64), submitted to the Foam-Laser Dynamic Posturography were used to evaluate the vestibular, proprioceptive and visual functions; the Dizziness Handicap Inventory (DHI) questionnaire on subjects with dizziness and the WHOQOL-Bref quality of life questionnaire. **Results:** the tests showed a significant difference between the changes in the posturographic evaluation and health aspects such as dizziness complaint (p = 0.02), metabolic diseases (p = 0.04), cardiovascular diseases (p = 0.02) and with the use of continuous medication (p = 0.03), self-reported. The older women presented lower scores in the functional domain of the DHI (p=0.02), showing a lower handicap in activities of daily living and the longer the quality of life in the WHOQOL-Bref psychological domain (p=0.04). **Conclusion:** the presence of dizziness and systemic diseases had a negative impact on postural balance and on the quality of life of the elderly women

Descritores

Equilíbrio postural
Envelhecimento
Tontura
Exercício
Qualidade de vida.

.RESUMO

Objetivo: analisar o equilíbrio postural de idosas independentes e sua relação com aspectos de saúde, faixa etária e qualidade de vida. **Métodos:** foram selecionadas 44 idosas independentes classificadas de acordo com as escalas: Index de Independência nas Atividades de Vida Diária (AVD) e das Atividades Instrumentais de Vida Diária (AIVD), com média de idade de 70,5 anos (+6,64), submetidas à anamnese, Posturografia Dinâmica Foam Laser, por meio do teste da organização sensorial (TOS) e analise sensorial, utilizada para avaliar as funções vestibular, proprioceptiva e visual; ao questionário Dizziness Handicap Inventory (DHI) nos sujeitos com queixa de tontura e o questionário de qualidade de vida WHOQOL-Bref. **Resultados:** os testes apontaram diferença significativa entre as alterações na avaliação posturográfica e aspectos de saúde como queixa de tontura (p = 0,02), doenças metabólicas (p = 0,04), cardiovasculares (p = 0,02), dores na coluna (p = 0,02) e com o uso de medicação contínua (p = 0,03), autorrelatadas. As idosas mais velhas apresentaram pontuação inferior no domínio funcional do DHI (p = 0,02), demonstrando menor restrição de participação nas atividades de vida diária e, quanto maior a idade, melhor a qualidade de vida no domínio psicológico do WHOQOL-Bref (p = 0,04). **Conclusão:** a presença da tontura e das doenças sistêmicas impactou negativamente no equilíbrio postural e na qualidade de vida das idosas avaliadas.

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INTRODUCTION

The elderly population is increasing worldwide due to greater control of epidemics, the advancement of science and the adoption of a more active lifestyle[1]. Successful aging is associated with active involvement in society and in life itself and with factors related to the physical, emotional and social environment[2,3]. Thus, active aging, beyond providing the elderly to remain physically active or able to work, is related to all issues involving the economy, society, culture and religion[3].

The aging process is accompanied by a decline in several body functions and structures and, although the elderly population is considered independent, it needs attention and care. The musculoskeletal system may have its reduced capacity due to changes in other systems or without a specific cause; the loss of mass and muscle strength result in impacts on the gait and balance pattern, increasing the risk of falls and interfering with the functional capacity of the elderly[3,4].

Body balance requires coordination of body movements and reaction to external stimuli that allow the stability of the upright position and the safe execution of daily activities[5]. The change in body balance can occur because neurological, musculoskeletal changes or when there is sensory conflict in one or more of the systems involved, namely, the vestibular, visual and somatosensory systems, causing the symptom of dizziness and/or imbalance[4].

Considering that changes in body balance can compromise the Quality of Life (QoL) of the elderly, investigating this aspect is essential[6,7]. To this end, a subjective instrument was developed that specifically assesses the disabling effects that dizziness can cause on a daily basis, measured using the Dizziness Handicap Inventory (DHI) questionnaire, an instrument that assesses self-perception and the impact on quality of life of the affected subjects[8,10].

QoL is related to aspects involving expectations, culture and personal concerns[11]. The elderly's self-perception of QoL is linked to interpersonal relationships, participation in family and/or friends meetings, because, in this way, they feel more valued, productive and belonging to the community in which they live[11].

The elderly people who are affected at some level of postural balance may have their QoL improved when there is early detection of these changes. Adequate guidance, environmental changes and rehabilitation can be important allies in preventing falls and improving the perception of QoL[6]. It is important that models based on curing the disease be replaced by early integrated care and focused on the needs of the elderly people[3].

People are living longer. Concerned with the aging of the independent and active population, how can we contribute to improving the health and the active elderly's quality of life, believing in the assessment and early intervention of their body balance? Researches have been carried out, emphasizing the elderly people affected by specific or disabling complaints, forgetting the functionally independent population.

Therefore, the aim of this study is to analyze the postural balance of independent elderly women and their relation with aspects of health, age and quality of life.

METHOD

This is an observational, descriptive, cross-sectional study, which used a quantitative approach, approved by the Research Ethics Committee under nº 16728013.0.0000.5346. All subjects read and signed the Informed Consent Term (ICF), consenting to their participation.

Casuistry

The sample consisted of convenience, consisting of elderly women evaluated from October 2016 to April 2017. In principle, a survey of elderly groups from different regions of the city was carried out, being responsible for the respective groups contacted by phone call. Thereafter, the date and time for the research were scheduled.

The following inclusion criteria were adopted: people from 60 years old, female, active life condition, practicing physical activity or not, with cognitive conditions to answer and perform the requested commands, with a score below 6 points on the scale Katz and more than 8 points on the Lawton scale. Sedentary males, under 60 years of age, with a history of acute orthopedic trauma, severe visual impairment, disabling neurological and/or motor impairment and lower limb amputation were excluded, as well as the elderly people who scored higher to 6 points on the Katz[11] scale and less than 8 on the Lawton[12] scale, which assess the level of dependence.

Initially, 50 elderly women were evaluated, two of whom were excluded because they were less than 60 years old and four due to neurological changes, a condition revealed through anamnesis. Thus, the sample of the present study consisted of 44 elderly women.

Procedures

The elderly women were submitted to anamnesis, independence scales [Katz [11]; Lawton[12]], in order to assess her functional independence through questions related to activities of daily living, such as, for example, if she bathes alone or goes to the supermarket alone, and through questionnaires on quality of life and dizziness, as well as the assessment of postural balance carried out with Foam-Laser Dynamic Posturography.

The anamnesis was elaborated for the present research, with questions related to the existence of signs/symptoms related to the physiological systems, to the auditory complaints (hearing loss and tinnitus), vestibular (dizziness and neurovegetative symptoms), as well as data related to the practice of physical activities and participation in social activities.

Regarding the independence scales, that is, which classify elderly women as functionally independent, the Index of Independence in Activities of Daily Living (ADL), by Sidney Katz[11], evaluates the functional autonomy of the elderly in activities of daily living in six functions (going to the bathroom, continence, transferring, bathing, dressing and eating). Classified from A to G and other, according to the degree of dependence or independence, classifying the elderly person as independent with a score of 6 points or less[6].

For the evaluation of Instrumental Activities of Daily Living (EIADL), the Lawton Scale[12] was used, which verifies the functional performance of the elderly in instrumental activities of daily living. It consists of three categories that assess the autonomy of the elderly with responses that ranged from independence (without help), partial dependence (with partial help) to dependence (cannot), with a maximum score of 27 points. The classification for independent elderly women is 8 points or more[12].

The QoL was verified using the World Health Organization Quality of Life Assessment (WHOQOL-Bref) questionnaire, consisting of 26 questions, including general questions about QoL covering the physical (seven questions), psychological (six), social relationships (three), environment (eight) and two general questions about QoL[6,8]. The domains were analyzed independently and/or according to the general average[17], the answers are part of a satisfaction scale that varies from 1 to 5 points. In the analysis of the answers, the final values are ordered from zero to 100, the worse the quality of life the lower the score[9]. The quality of life of the elderly can be classified as satisfactory for final values greater than 60 and, below this value, as unsatisfactory / bad QOL[10].

Subsequently, the elderly women answered the Dizziness Handicap Inventory (DHI) questionnaire, used to assess the degree of discomfort of dizziness in daily life and composed of 25 questions categorized in three aspects: physical, emotional and functional, totaling 100 points[11]. The higher the score by aspects or total, the greater the handicap and the worse quality of life of individuals[12,13].The analysis of the total DHI score classifies the disadvantage of dizziness as mild (between zero and 30), moderate (31-60) and severe (61-100)[17].

After the DHI application, the elderly women were submitted to Foam-Laser Dynamic Posturography, to evaluate the vestibular, proprioceptive and visual functions, in six positions, for 20 seconds each, in order to measure body oscillation and subsequent sensory analysis (Figure 1)[5,6,14].

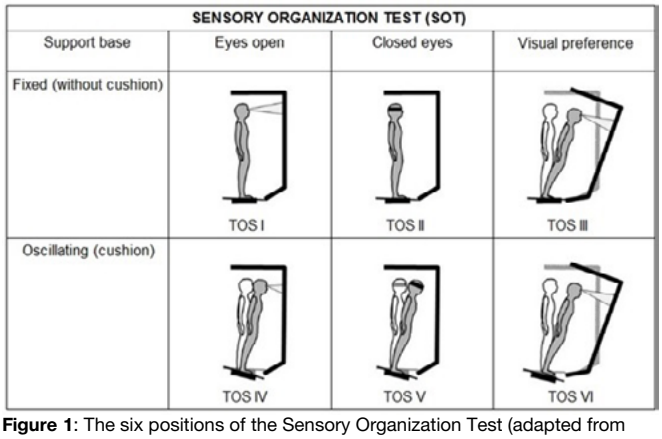

Figure 1: The six positions of the Sensory Organization Test (adapted from Castagno, 1994).

Subjects were informed that they would be exposed to the minimum risk of mild discomfort and/or tiredness, for the time they would make available for the evaluations. Among the benefits offered by the research were the assessment of postural balance and guidance on the complaints and inadequate habits identified, as well as clarifying the doubts of the elderly women after the evaluations.

The elderly women received feedback from the evaluations carried out and an educational folder regarding postural balance and, when necessary, were referred for complementary speech-language tests (vectoelectronystagmography, pure-tone audiometry and/or other electroacoustic and electrophysiological tests) according to the availability of these evaluations, as well as oriented to seek other professionals, according to the complaints or possible changes presented.

Data analysis

Descriptive statistical analysis of the qualitative variables (social and physical activities performed by the elderly women) was carried out, as well as the information obtained in the clinical anamnesis. For data analysis of the DHI questionnaire, WHOQOL-Bref and Foam-Laser Dynamic Posturography, the Shapiro-Wilk Test was used to verify the normality of the quantitative variables and, subsequently, the parametric and non-parametric hypothesis tests - Mann Whitney U Test, Student's T-Test and Spearman's Test -, for comparisons and associations among variables, using the Statistica 9.1 computational application, and a significance level of 5% was adopted to reject the null hypothesis.

RESULTS

The sample consisted of 44 elderly women, with a mean age of 70.5 years (+6.64), ranging from 60 to 89 years. We highlight the professions that are or have been exercised: two (4.55%) traders, two (4.55%) teachers, two (4.55%) nursing technicians, four (9.09%) administrative assistants, five (11.36%) seamstresses, eight (18.17%) general services, 13 (29.56%) from home and eight (18.17%) did not inform. Of these, 26 (59.10%) were retired.

As for the practice of regular physical activity, 37 (84.09%) were adept, with weekly frequency, in which 25 (67.57%) elderly women reported exercising twice a week, four (10.81%) practiced three times, and eight (21.62%) four times or more. The types of activities described were: eight (21.62%) only gymnastics, one (2.7%) only swimming, two (5.4%) walking and dancing, and 26 (70.28%) gymnastics and other activities (gym, pilates, dance, swimming, walking and/or theater). As for the time of regular physical activity that the elderly women have been practicing, nine (24.33%) of them have been active for less than 10 years; 17 (45.95%) aged 10-20 years; and 11 (29.72%) for more than 20 years.

The frequency of elderly women in social groups can be observed in 40 (90.91%) elderly women, among these, 32 (80%) attend only the elderly group and eight (20%), the elderly group and the church (figure 2).

Regarding auditory and vestibular complaints, 14 (31.81%) elderly women reported dizziness, 10 (71.43%) of the vertigo type and four (28.57%) non-rotational dizziness. In relation to the duration of dizziness in elderly women with vertigo, five (50%) had duration of seconds, four (40%) of minutes and one (10%) of weeks; while in non-rotating dizziness, two (50%) indicated duration of seconds and two (50%) duration

of minutes. Neurovegetative symptoms occurred in six (60%) elderly women with vertigo and only in one (25%) with non-rotating dizziness. Of these with dizziness, seven (50%) have tinnitus, six (85.71%) have a high pitch, one (14.29%) low pitch, and eight (57.14%) have hearing loss.

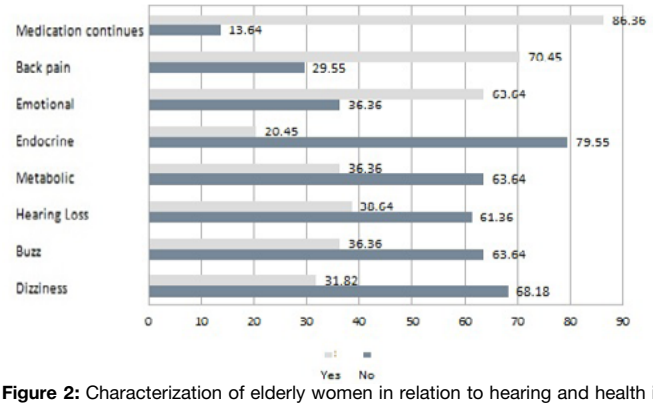

Figure 2: Characterization of elderly women in relation to hearing and health in general. Values expressed as a percentage (n – 44)

In the general sample, 16 (36.36%) had tinnitus, 13 (81.25%) had a high pitch and three (18.75%) low picth; as for the location of the tinnitus, two (12.50%) reported that it occurred in the head; four (25%) that the noise was bilateral; seven (43.75%) on the right; three (18.75%) on the left. Hearing loss was reported by 17 (38.64%) elderly women; as for the location, six (35.29%) were bilateral, six (35.29%) on the left and five (29.42%) on the right.

As for general health aspects, four (9.09%) elderly women reported smoking; 31 (70.45%) maintain adequate food; 26 (59.09%) use corrective lenses, of which 18 (40.91%) are poorly adapted.

The tests showed a statistically significant difference in the relation between the change in posturographic evaluation and the elderly women with complaints of dizziness, metabolic and cardiovascular diseases, back pain and the use of continuous medication, in the respective positions and systems, position III; in the Visual System; in position I and IV; in position IV; and in position II and overall average (Table 1).

Table 1. Mean and p values obtained in the Sensory Organization Test (SOT) and Sensory Analysis of active elderly women with and without health problems (n – 44).

Health problems		I	II	III	IV	V	VI	Mean	SOM	VIS	VEST	PREF
Dizziness	Yes	85.57	74.56	70.49	80.86	66.49	52.70	71.78	86.75	94.87	77.56	91.56
	No	85.91	74.89	70.08	81.33	65.94	50.36	71.41	86.82	94.99	76.67	89.02
	pp	00.54	00.38	00.02*	00.58	00.79	00.46	00.29	00.36	00.43	00.94	00.62
Metabolic diseases	Yes	85.65	74.69	70.31	81.18	66.40	53.40	71.94	86.83	95.12	77.39	91.67
	No	85.95	74.91	70.59	81.26	65.99	50.10	71.47	86.80	94.88	76.70	89.29
	pp	00.13	00.11	00.54	00.74	00.67	00.82	00.41	00.32	00.04*	00.09	00.65
Cardiovascular diseases	Yes	85.69	74.63	70.02	81.11	66.09	50.40	71.32	86.74	94.99	77.01	89.19
	No	85.85	74.79	70.24	81.05	65.10	49.50	71.24	86.75	94.76	76.79	88.79
	pp	00.04*	00.12	00.33	00.02*	00.44	00.85	00.09	00.39	00.21	00.83	00.77
Endocrine disruption	Yes	85.71	74.36	70.61	81.02	66.11	51.31	71.52	86.40	94.88	77.01	90.50
	No	85.91	74.89	70.08	81.33	65.94	50.30	71.41	86.82	94.10	76.67	89.02
	pp	00.45	00.34	00.30	00.34	00.46	00.48	00.21	00.36	00.47	00.33	00.90
Back pain	Yes	85.95	74.91	70.59	81.26	65.99	50.11	71.47	86.80	94.88	76.70	89.29
	No	85.65	74.69	70.31	81.18	66.40	53.40	71.94	86.83	95.12	77.39	91.67
	pp	00.17	00.55	00.34	00.02*	00.59	00.62	00.58	00.87	00.33	00.11	00.85
RV		90	83	82	79	60	54	75	92	88	67	95

Mann-Whitney U Test.
Legends: n – sample; SOM – somatosensory; VIS – visual; VEST – vestibular; PREF –visual preference; RV – reference value; p – p value; (*) – statistical significance.

The age compared to the anamnesis data demonstrated that the older elderly women are those who have hearing loss and cardiovascular changes, while the younger women presented greater emotional changes and back pains (Table 2).

Table 2. Comparison between the age of the participants and the data collected in the anamnesis (n= 44)

Health problems		n	Age	SD	p value
Dizziness	Yes	14	70.00	+5.75	0.83
	No	30	70.47	+7.10	
Neurovegetative symptoms	Yes	07	66.86	+5.08	0.13
	No	37	70.97	+6.75	
Tinnitus	Yes	16	72.06	+6.65	0.19
	No	28	69.32	+6.45	
Hearing loss	Yes	17	72.94	+4.89	0.04*
	No	27	70.25	+7.13	
Metabolic	Yes	16	70.44	+6.97	0.93
	No	28	70.25	+6.22	
Cardiovascular	Yes	29	71.75	+5.48	0.04*
	No	15	67.53	+6.81	
Endocrine	Yes	09	69.89	+4.96	0.83
	No	35	70.43	+7.06	
Emotional change	Yes	28	68.04	+6.97	<0.01*
	No	16	4.31	+5.32	
Back pain	Yes	31	68.97	+6.32	0.04*
	No	13	73.54	+6.50	

Student T Test.
Legends: n – sample; SD – standard deviation; (*) – statistical significance.

In Table 3, the older elderly women presented score lower in the DHI functional domain, showing less handicap. In addition, it was possible to observe that the older the better the quality of life in the psychological domain of the WHOQOL-Bref (Table 3).

Table 3. Relationship between age and quality of life questionnaires Dizziness Handicap Inventory (DHI) and World Health Organization Quality of Life Assessment (WHOQOL-Bref)

Questionnaires	Domains	n	Mean	r	p value
DHI	Physical	14	12.71	-0.048099	0.87
	Emotional	14	10.00	-0.266816	0.36
	Functional	14	13.29	-0.621350	0.02*
	Total	14	35.86	-0.394856	0.16
WHOQOL-BREF	Physical	44	71.10	0.060975	0.69
	Psychological	44	72.20	0.304427	0.04*
	Social	44	81.60	-0.105304	0.49
	Environmental	44	70.90	0.072421	0.64
	QoL score	44	74.00	0.077467	0.62

Spearman correlation test.
Legends: n – sample, r – Correlation coefficient; QoL – quality of life; (*) – statistical significance.

The relationship of elderly women with complaints of dizziness showed worse values in the WHOQOL-Bref in the physical, psychological and quality of life domains in general. In the environmental domain, the value was also lower in the group with complaints of dizziness, 65.85 points, although without statistical difference (Table 4).

Table 4. Relationship of the mean values of the World Health Organization Quality of Life Assessment (WHOQOL-Bref) domains between groups with and without dizziness (n – 44)

Domains	Dizziness		Z	p value
	Yes	No		
Physical	66.07	73.81	1.92	0.05*
Psychological	66.07	75.14	2.01	0.04*
Social	79.17	84.17	0.99	0.32
Environmental	65.85	73.02	1.72	0.09
QoL score	69.29	76.53	1.97	0.05*

Mann-Whitney U test.
Legends: n – sample; Z – Z value; QoL – quality of life; (*) – statistical significance.

DISCUSSION

The increase in the elderly population is a global phenomenon, the result of political, social achievements and new technologies. There is a preponderance of elderly women, since men have a higher rate of mortality due to greater exposure to risk factors, such as smoking and alcoholism[15].

Medication treatments were reported by 86.36% of the sample, there was a relationship between posturographic evaluation in TOS II - proprioceptive (p = 0.03) and the use of continuous medication. Medicine therapy, by elderly Brazilians, reaches 50% of prescriptions for the entire population. It is known that the use of medications can decrease the responses of neural sensors and the nervous system, interfering with the perception of the body in space[16].

In the compulsory literature, when comparing balance in elderly women who do not practice physical exercises, there is no relationship between the groups (p = 0.093)[17]. It was observed that 84.09% of the elderly women regularly perform physical activity, of these 45.95% reported practicing for more than 10 years, but there was no relationship between the assessment of body balance and the practice of physical activity. Women in general are more attentive to health and have a more careful perception of the body, so the insertion of physical activity is associated to health maintaining and care valuing with body image[18].

A list of back pain complaints was found among younger elderly women (p = 0.04), with a mean age of 68.97 years and in the posturographic evaluation in TOS IV - visual (p = 0.02). Spinal problems begin in young adulthood and have a worse perception at the end of the fifth decade of life, since, at this age, consolidation occurs and, at older ages, they remain at constant levels, demonstrating greater resilience of the older elderly in relation to pain[18,19].

The age increase also influences the decline in vision[20]. This fact was confirmed in the present study, since 59.09% of the studied population used corrective lenses, of which 40.91% were poorly adapted, a fact that can directly interfere with the visual system and, possibly, with body balance.

Emotional changes were present in more than half of the population, however, older elderly women, mean age 74.31 years, had lower emotional changes, lower scores in the DHI functional domain (13.29 points) and better scores in the psychological domain of the WHOQOL-Bref, showing less handicap, which corroborates results of other studies, in which the elderly over 60 years old feel younger than their chronological age - a factor that helps in better physical and psychological functioning. They experience the aging process as a phase of pleasure, although society worships youth as a "standard" of beauty and often references the elderly, especially women, as frail and sick[21,22]. Although biopsychosocial changes occur in this phase of life, the arrival of grandchildren and great-grandchildren, the possibility of frequent living and caring for them, the availability of time and greater contact with the family provide better emotional, functional and psychological result.

Concerning general health and hearing aspects, there were cardiovascular changes in the older elderly women ($p = 0.04$) and a relationship in the posturographic evaluation TOS I ($p = 0.04$) and IV - visual ($p = 0, 02$). According to the literature, which states that the elderly's imbalance can be considered a geriatric syndrome, secondary to diseases in several systems and/or organs, characterized by multisensory changes[23,24]. Diseases of the circulatory, cardiovascular, neurological, musculoskeletal systems, neoplasms, respiratory diseases and the use of different medications are the main causes of deaths of elderly women in Brazil[15,25]. Metabolic changes are frequent causes of changes in the vestibular system, and may be present in 40% of the population[25,26]. The presence of metabolic disease was perceived in 36.36% of the studied population, and a significant relationship was found with the visual system ($p = 0.04$).

In old age, there are numerous complaints of hearing difficulties, tinnitus and, mainly, dizziness. However, this number may be lower in elderly people who have an active life and/or carry out activities in groups of elderly people, as they are encouraged to adopt healthy habits, receive health education and, consequently, have reduced complaints and improved QoL[24]. Among the consequences that dizziness can trigger are negative feelings, the inability to perform social, professional and domestic activities, directly influencing the QoL of these subjects[13].

Thus, although there was no significant occurrence of complaints of tinnitus, hearing loss and dizziness in the participants, the elderly women with complaints of dizziness had lower averages in all domains of the WHOQOL-Bref, with a significant relation in the physical domains ($p = 0.05$), psychological ($p = 0.04$) and QoL ($p = 0.05$) of the instrument. In a study with elderly men and the perception of quality of life, there is no significant difference, but men have the psychological domain with a low score and better results for the social and physical domains[27]. On the other hand, independent elderly women participating in an Elderly Program have a worse social domain ($p = 0.86$) and a better physical domain ($p = 0.37$)[28]. In this sense, the perception of QoL is subjective for each subject. Both male and female, in the absence of other complaints, perceive the physical domain better. The opposite occurs when there is a complaint of associated dizziness, as there is an influence of the visual, proprioceptive and vestibular systems on physical performance.

The DHI classification for dizziness handicap was moderate (35.86 points) and, in the posturographic evaluation, there was a relationship in TOS III - visual in a situation of overload ($p = 0.02$). In elderly men and women with vestibular dysfunction and dizziness, DHI is classified as moderate (38.5 points)[29]. Moreover, the functional domain (13.29 points) was the most impaired, collaborating with a study, in which the type of dizziness, rotational or non-rotating, does not show any difference, however the functional domain (19.5 points) is the most impaired in both types of dizziness[13].

The QoL of the elderly women, according to the WHOQOL-Bref instrument, is classified as satisfactory. However, we cannot ignore the fact that the presence of the dizziness complaint interferes in the independent life of this population, which may decrease the performance in their activities of daily living and in their biological, psychological and social well-being.

Investment in health and well-being will positively impact the activities in which the elderly participate, improving their quality of life, as well as that of their families. This event generates less spending on health services, due to the reduction of repeated and costly hospitalizations[30].

Therefore, we emphasize the importance of maintaining an independent life without disregarding the factors that can have a negative impact, such as comorbidities and associated complaints. We emphasize that elderly women with advanced age do not determine greater susceptibility to impacts on quality of life.

The elderly women selected for the study have a differential profile when compared to other elderly women working in the general population, especially because regular physical activity is present in a large part of the sample. This demonstrates the importance of comparing other profiles of elderly women in order to make the results obtained more expressive, valuing the best in the particularities of each elderly population.

CONCLUSION

The present research demonstrated that postural balance was more altered in independent elderly women who reported metabolic and cardiovascular diseases, spinal pain, use of continuous medication and complaints of dizziness.

The elderly women with dizziness had worse values in the physical, psychological and general WHOQOL-Bref scores. Moreover, the older the age, the better the quality of life, especially in the psychological domain. Therefore, the presence of dizziness and systemic diseases had a more negative impact than the age factor.

Therefore, the importance of carrying out conventional assessments for the investigation of the balance of independent elderly people is highlighted, together with other instruments capable of measuring the handicap of their activities in general, helping in the better conduct of the professionals involved, as well as encouraging the maintenance of an active life in this population, to prevent alterations in balance and a decrease in quality of life.

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Authors' contributions

KCVS: participated in the idealization of the study, collection, analysis and interpretation of data and writing of the article; BNP: participated in the collection, analysis and interpretation of results; VAVSF: participated as a supervisor, idealizing the study, analyzing, interpreting the data and writing the article.