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POSTURAL BALANCE IN AGED PARTICIPANTS OF A GROUP OF HEALTH PROMOTION

EQUILÍBRIO POSTURAL EM IDOSOS PARTICIPANTES DE UM GRUPO DE PROMOÇÃO DA SAÚDE

EQUILIBRIO POSTURAL EN PERSONAS MAYORES PARTICIPANTES DE UN GRUPO DE PROMOCIÓN A LA SALUD

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ABSTRACT

Objective: evaluating the postural balance in older adults who participate in a health promotion group. **Method:** a quantitative study, of observational and cross-sectional type. It was carried out the Mini Mental State Examination (MMSE) for cognitive screening, the questionnaire Falls Efficacy Scale (FES), which assesses the fear of falling and subsequently; it was evaluated the balance, the Berg Scale, which assesses the static and dynamic balance of the elderly. The study was approved by the research project of the Research Ethics Committee, CAAE 21407913.9.0000.5012. **Results:** the sample consisted of 14 elderly patients with a mean age of 69,92±5,67. The MMSE showed results in average 21,42; FES an average of 97,96; the Berg Scale average 54,71; and the correlation coefficient Spearman's rho between Berg and FES indices of 0,447. **Conclusion:** The data showed a good functional balance for the individuals participating in the group health promotion. **Descriptors:** Postural Balance; Elderly; Health Promotion.

RESUMO

Objetivo: avaliar o equilíbrio postural em idosos que participam de um grupo de promoção à saúde. **Método:** estudo quantitativo, do tipo observacional e transversal. Realizou-se o Mini Exame de Estado Mental (MEEM), para rastreio cognitivo, o questionário *Falls Efficacy Scale (FES)*, que avalia o medo de cair e, posteriormente, avaliou-se o equilíbrio, Escala de Berg, que avalia o equilíbrio estático e dinâmico do idoso. Estudo teve aprovado o projeto de pesquisa pelo Comitê de Ética em Pesquisa, CAAE 21407913.9.0000.5012. **Resultados:** a amostra foi de 14 idosos com a média de idade de 69,92 ± 5,67. O MEEM apresentou como resultado a média de 21,42; o FES uma média de 97,96; a escala de Berg média de 54,71; e o Coeficiente de Correlação de Spearman's rho entre os índices Berg e FES de 0,447. **Conclusão:** os dados mostraram para um bom equilíbrio funcional dos idosos participantes do grupo de promoção da saúde. **Descritores:** Equilíbrio Postural; Idoso; Promoção da Saúde.

RESUMEN

Objetivo: evaluar el equilibrio postural en los adultos mayores que participan en un grupo de promoción a la salud. **Método:** un estudio cuantitativo, del tipo observacional y transversal. Hemos llevado a cabo el Mini Examen del Estado Mental (MMSE) para el cribado cognitivo, el cuestionario *Falls Efficacy Scale (FES)*, que evalúa el miedo de caer y, posteriormente, evalúa el balance, la Escala de Berg, que evalúa el equilibrio estático y dinámico de la tercera edad. El estudio fue aprobado por el proyecto de investigación del Comité de Ética de Investigación, CAAE 21407913.9.0000.5012. **Resultados:** la muestra consistió en 14 pacientes ancianos con una edad media de 69,92±5,67. El MMSE mostró resultados en promedio 21,42; FES un promedio de 97,96; la Escala de Berg media 54,71; y el coeficiente de correlación rho de Spearman entre los índices Berg y FES de 0,447. **Conclusión:** los datos mostraron un buen equilibrio funcional para las personas que participaran en del grupo de la promoción a la salud. **Descriptores:** Balance Postural; Ancianos; Promoción de la Salud.

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INTRODUCTION

The IBGE, through its National Research by Household Sample (PNAD, 2009), from 1999 to 2009, considered the number of elderly (60 or older), in the overall Brazilian population, which increased from 9,1 % to 11,3%.¹ These data on the aging population indicate the need for new studies about the elderly.²

The elderly presents performing different in many systems that cause various complications. One of them is related to postural control, which affects directly the balance and decreases the compensatory capacity of the organism. Other changes those affect the body of the elderly are directly related to environmental factors or consequences of an unhealthy life.³

During aging, the physical capacity is reduced, of what is attributed to three issues: decreasing of levels of muscle strength; to poor performing when walking and changes in static balance.⁴ Also in relation to physical capacity, it has the sarcopenia, which is included as a variable to define the frailty syndrome in older people because it brings a greater risk that the individual will become a senior who falls frequently, which can lead him to suffer fractures, disability and / or dependence, routine hospitalization, and even get him to death.⁵

With reliance on the expanded concept of health proposed by the World Health Organization, in 1986, the Ottawa Charter carries directions for health promotion, pointing to the need to reducing social inequality and to building an active and empowered community with their health, seen as a phenomenon influenced by physical, socioeconomic, cultural and environmental factors.⁶

Health promotion can be developed in groups. These groups promote health are conceptualized as collective and interdisciplinary interventions those try to eliminate unnecessary differences to the group covering the commitment of time, place and functioning - in group - for development of health promotion activities.⁷

Physical activity or exercise is part of the practice of health promotion. These activities, when performed collectively, with people in the same age group, favor the well-being of the elderly by facilitating the interaction and the ability to providing feelings in common, such as the occurrence of catharsis.⁸

Facing this context, the question is: "Seniors who participate in group of health

promotion have a good postural balance?" Through this problem the study was developed, which aims to:

- Assessing the balance of the elderly participants of a group of health promotion.

METHOD

This is a quantitative study, of an observational and cross-sectional type. All elderly participants of a group of health promotion, which is developed in partnership with physiotherapy and social assistance, were invited. Physiotherapy belongs to compulsory traineeship course of physical therapy, which works in a private higher education institution, and social workers belong to the Reference Center for Social Assistance (CRAS). Activities under this group are educational, focusing on health promotion. The elderly have the measurement of vital signs (blood pressure, heart rate and respiratory rate), and physical exercise offer an average of 90 minutes in total, with 40 minutes for educational activities, and 50 minutes for physical exercise practice (warm up, main exercise with muscle chains and psychomotor skills and cooling).

The inclusion criteria consisted on the acceptance of the elderly aged over 60, who owned an independent walking and would be group participants of health promotion. After analyzing the inclusion criteria, the sample showed a total of 18 elderly, however, 4 of these did not agree to participating. The study was conducted in October and November 2013.

After signing the consent form, the Mini Mental State Examination (MMSE), which is a cognitive screening was performed; and also, the questionnaire Falls Efficacy Scale (FES), which assesses fear of falling among the elderly. Subsequently, we assessed the balance, by applying the scale of BERG, which is a validated instrument that assesses the functionality and the balance consisting of 14 tasks with -- each of these -- five items, and each item has a score of 0-4 for each task: 0 - is unable to perform the task; and 4 - performs the task without help and / or independently. The total score ranges from 0 to 56 points. As much lower was the score, the greater was the risk for falls, and consequently, the higher this is, the better the elderly.⁹ The scale was adjusted for application in Brazil, by Miyamoto; Lombardi Junior; Berg; Ramos; Natour; who put on each item, scores ranging from 0 to 4, with duration set to perform a certain task.¹⁰

The statistical analysis was descriptive and

statistical, in which data were quantified, analyzed, percentage, fashion, mean and standard deviation, summarized and displayed in three tables and one figure, drawn by Excel 2010 program for Windows XP ® and SPSS 16, version for Windows.

This study was conducted with the approval of the research project by the Research Ethics Committee, of the Faculty Estacio of Alagoas; under protocol 415.947 and CAAE 21407913.9.0000.5012.

RESULTS

The sample consisted of 14 elderly patients, and these ranged from age 60 to 81 years old, with an average of 69,92 ± 5,57 years, with 13 females and one male.

Table 1. Population, average and standard deviation (MMSE). Maceió-AL, 2013.			
	Quantities of Research Subjects	Average	SD
Illiterates	05	18,6	1,62
low/medium	08	23	2,12
high	01	26	0
Total	14	67,6	3,74

The data obtained through the MMSE were: 21,46% reached 19 points; 14,28%, 24 points; 14,28% reached 26 points; 14,28% reached 21 points; 7,14%, 16 points, 7,14% reached 22 points, 7,14% reached 23 points, 7,14% reached 18 points, and for finally, 7,14% reached 25 points. Considering education, no elderly of the research showed cognitive impairment, according to MMSE.

The results obtained with the application of FES questionnaire were: 71,44% (10 people) achieved the maximum score of one hundred (100) points; 7,14% (one person) reached 95 points; 7,14% (one person) reached 94 points;

To perform the cognitive screening of each participant, we used the MMSE, which is the most used instrument in the world, with several versions, used in several languages and in several countries.^{11,12} The test had its application and score according to studies and had as the maximum score 30 points.¹³ This score is divided by the criterion of education in relation to classification scores in the following categories: illiterate ≤ 13; low / medium ≤ 18; and high ≤ 26 points.¹⁴

The educational level of the sample was heterogeneous, what did not influence on the data analysis that takes into account the education¹³, as shown in Table 1.

7,14% (one person), 87 points; and 7,14% (one person) reached 54 points. This result showed that only 4 research subjects have some fear of falling.

The BERG scale, which evaluates static and dynamic balance, when applied in the research subjects, showed little variation from the average, which indicates that there are no large differences between individuals in the analyzed sample, regarding the postural balance, as described in Figure 1.

Table 2. Average, trend and standard deviation of the Scale of Berg. Maceió-AL, 2013.

BERG	Average	Trend	SD
	54,71	54	0,96

The research data relating to the scale of BERG, as the percentage variation between the results presented. However, all values

correspond to a score of postural, static and dynamic balance, satisfactory to the sample, as can be seen in Figure 1.

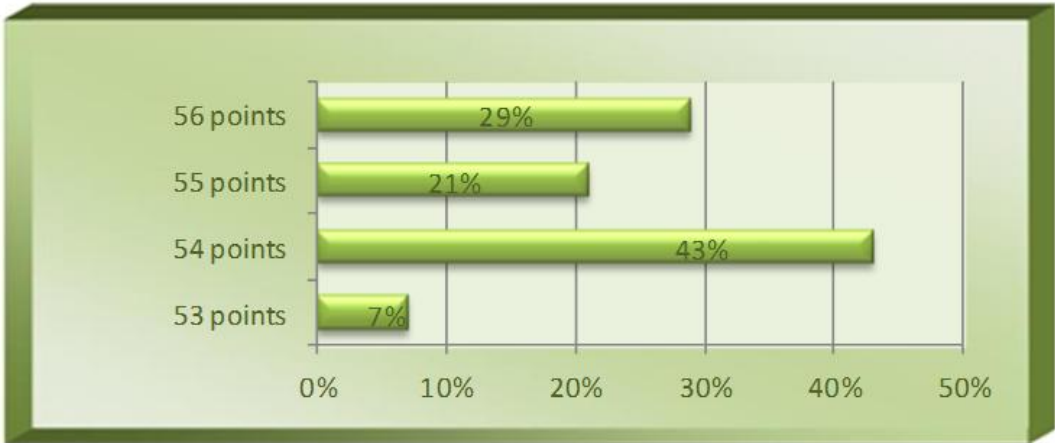


Figure 1. Scale of Berg performed with the subjects of the research. Maceió-Alagoas, 2013.

For the analysis of the correlation of the results of the BERG Scale and of the questionnaire FES a nonparametric test was used for Correlation of Spearman's rho. Among the results concerning the sample referring to BERG and FES Scales, of the present research, there was obtained a percentage of 0,447,

and therefore, do not present a significant difference. This analysis was performed using SPSS 16 software - Windows version - and showed that elderly who have a fear of falling, are not necessarily fallers or have fear of performing activities of daily living (ADL's), according to Table 3.

Table 3. Statistical data of Spearman's rho Correlation between the BERG Scale and the FES questionnaire . Maceió-AL, 2013.

Evaluated items	P	R
Berg x FES	0.447	-0.221

DISCUSSION

The data from this study, which was obtained from 100% of the sample (14 study subjects), showed no cognitive problem as proposed in the literature score.¹⁴ A study in Viçosa - Minas Gerais -, which evaluated 74 elderly aged 60 to 85 years old, found a high prevalence of cognitive impairment in the sample studied, and this study differs because, even if such elderly belonged to a program for the elderly, which has as main objective promoting, through an educational process-prevention, improving the quality of life of elderly¹⁵, ie, the same goals advocated by group health promotion, as evidenced in this study, the results were different.

The FES questionnaire in this study achieved a 71,44 percentage of elderly who reported not having fear of falling, in performing daily living and instrumental activities of daily living activities. These points to the fact that elderly participants of a group to promote health, can have more independence to carry out essential activities of their daily lives with less fear or insecurity, differing from studies in Diamantina, State of Minas Gerais, and the city of Manaus.

The study with residents of the city of Diamantina, Minas Gerais, Brazil, the community was composed of 147 elderly, where 94 (65,95%) were women and 53 men (36,05%) of the total of 147 respondents, 133 (90,48%) reported fear of falling, thus making sure that among them there is a high prevalence of fear of falling, as they claimed to have this fear, at least one of the challenged, tasks present in the range.¹⁶

Another study, conducted with participants from the state community center for the elderly, with ages ranging from 60 to 85 years old, located in the neighborhood of Aparecida, in the city of Manaus, showed that 100% of respondents, or more precisely, 41 elderly have fallen.¹⁷ However, not correlated to fear of falling.

Correlating with no institutionalized elderly, and care in the geriatric outpatient clinic of a university hospital, located at João

Pessoa/Paraíba; it was found that 84,16% of a total of 101 elderly people have fear of falling.¹⁸ Perhaps this is because that these seniors can be with some morbidity therefore are in outpatient care.

In assessing the BERG Scale, in this study, the average score was 54,71 points. Considering the results, 92,86% (13 subjects) reached a margin ranging between 56-54 points, and of these, only one volunteer reached 53 points, which showed a high level of functional balance, these seniors. This was possibly because the study subjects were elderly patients with preserved autonomy and physical activity practitioners routinely in two weekly meetings.

The study conducted at the community center of the Elderly, Padre Quintilho Costini, located in the municipality of Campos Novos - Santa Catarina, with a target audience of 18 elderly, of which ten were female and eight male with ages ranging 60-75 years old. This study showed that physical activity practitioners who participated in the group averaged 54,6 points, proving that they have a good balance, in accordance with the Scale of BERG.¹⁹ The research agenda had an average of 54,71 points, corroborating with the data obtained from the study in Santa Catarina, where ages had similar margins - 60-81 years old - it was noted also that there was a female predominance in the samples from the two surveys.

The study conducted at the Reference Center for Social Assistance of Jataí, Goiás, has as sample of subjects aged between 56 and 73 years old and showed that they reached an average of 53,17, pointing to a greater deficit in the balance issue, however, can still be considered participants in this research, focused now, they also have a good level functional balance and hence a low risk to suffer falls²⁰, similar finding was the one found in the present study.

In a research with 51 elderly, the average age was 78; participants in a course to balance training with activities developed in 8 meetings were assessed with the Berg Scale and, after training, was given as group

average of $52,50 \pm 2,73$.²¹ The present study with elderly people who perform regular physical activity, in the promotion group, showed an average BERG Scale score of $54,71 \pm 0,96$, which possibly was due to the average age of the elderly being less (69,92 years old).

In Thailand, a study, follow-up of 12 months, was carried out with 146 elderly fallers who presented the research intervention as a physical exercise. Obtained as a result of the intervention that older people have improved their balance, regardless the frequency of falls prior to the survey.²² Corroborating with the data obtained in this study, since the elderly participants perform physical activities and showed a good balance.

Comparing with the institutionalized elderly residents of the Old Peoples Home of Piracicaba, aged between 70 and 80 years old, saw a lower score than those cited above, however, a margin of 79,2% reaching a satisfactory rating, ranging from 41 to 56 points. According to the researchers, most had a good score for showing up independently the activities proposed and demonstrated a good balance in their realization.²³

For the analysis of correlation of results by BERG Scale and the FES questionnaire of the present study, we obtained a percentage of 0.447, thus, no statistically significant difference. This analysis was performed using SPSS version 16 for Windows and showed that elderly people who have fear of falling are not necessarily fallers or have fear of performing activities of daily life (ADL's). This corroborated with the study at the Catholic University of Goiás, where such correlation a percentage of 0,418; a correlation coefficient of 0,235; and a standard deviation (SD) of 2,01. Thus, research has shown that according to research conducted at the University of Goiás, BERG Scale and the FES questionnaire also had no strong correlations.²⁴

CONCLUSION

It was noted that the elderly participants in the health promotion group assessed through the Berg Scale have a better balance when performing essential activities to the day-to-day. Statistical data show that there is a positive correlation between the BERG Scale and the FES questionnaire.

Activities for health promotion, through the use of expanded biopsychosocial concept, may have optimized the process of healthy

aging and the elderly surveyed favored the maintenance of their postural balance.

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