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Risk of falls among institutionalized elderly: a descriptive and correlational study

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ABSTRACT

Aim: To describe and analyze the association between institutionalization time in Homes for the Aged and the postural balance and risk of falls of this population.

Methods: This is a descriptive correlational study. The dependent variables will be measured through the use of scales of postural balance and stabilometry. The census consists of all population institutionalized at Homes for the Aged in the city of Três Rios (RJ), between September 2011 and March 2012. Data processing includes the Kolmogorov-Smirnov test to verify the distribution. The data presented will be submitted to a Pearson correlation test and the analysis of variance for one factor, to allow comparisons between inter-groups and intra-subgroups. In the event that a Gaussian distribution is not presented, non-parametric tests will be used. The significance level used will be 5%. For statistical analysis BioEstat 5.0 software will be adopted.

Keywords: accidental falls; postural balance; Homes for the Aged.

INTRODUCTION

The phenomenon of an aging population receives the most diverse influences such as a decreased fertility rate, increased life expectancy, and the substitution of infectious diseases for chronic degenerative diseases. These factors contribute to the change in the demographic and epidemiological scenarios in Brazil⁽¹⁾. The physiological and functional decline, even when considered within the normal range in the process of aging, brings a new challenge to the public health services and should be aimed at preserving the quality of life of the elderly⁽¹⁾. Among the characteristics of the decline in physiological capacities with age is postural balance, which is based on the interaction of sensory inputs and motor responses. The literature suggests that in the elderly, posture control is less efficient, consequently leading to a higher probability of falls⁽²⁾. In the contemporary context, it is necessary that the knowledge about the needs of this aging population is tailored to their demands. In terms of this expectation, the increase in the number of Homes for the Aged is noticeable⁽¹⁾. With the possibility of institutionalization, a decrease in the cognitive, physical and functional capacities of the elderly compared to those living in the community has been observed. It has been observed that many of these elderly are institutionalized but still with good levels of autonomy, and this causes them to decline faster than the non-institutionalized elderly, raising the incidence of falls.

OBJECTIVES

General: to describe and analyze the association between institutionalization time and the risk of falls, by measuring the postural balance of elderly residents in Homes for the Aged.

Specific objective 1: correlate institutionalization time with the postural balance and risk of falls on the part of the elderly.

Specific objective 2: compare the postural balance and risk of falls of the elderly intra and inter subgroups.

METHOD

This is a descriptive – analytical – correlational research using a cross-sectional design⁽³⁾ into the influence of institutionalization time in Homes for the Aged regarding postural balance and the risk of falls, measured using postural balance scales and stabilometry, in the elderly. In addition, it is a comparison of intra-subgroups and inter-groups of elderly residents in Homes for the Aged in the city of Três Rios/RJ. The sample is selected in a non-probabilistic basis, using those who meet the eligibility criteria. After being selected, the elderly will be submitted to a postural balance assessment through the Berg Balance Scale method and stabilometric analysis, measured through variations in the center of pressure on a force platform. This project was approved by the Research Ethics Committee of the University Hospital Antonio Pedro under Opinion n°. CAAE: 0375.0.258.000-11. The sample will be homogenized and stratified by gender, age and length of institutionalization as demonstrated in Tables [1](#) and [2](#).

Table 1 - Stratification and homogenization of groups of institutionalized elderly (female). * For long period of institutionalization; ** for average period of institutionalization; *** for a short period of institutionalization.

Female institutionalized Group (FIG)	Age	Subgroup (institutionalization time)
FIG1 from 60 to 64 years		FIG1L * FIG1A ** FIG1S ***
FIG2 from 65 to 69 years		FIG2L * FIG2A ** FIG2S ***
FIG3 from 70 to 74 years		FIG3L * FIG3A ** FIG3S ***
FIG4 from 75 to 79 years		FIG4L * FIG4A ** FIG4S ***
FIG5, > 80 years		FIG5L * FIG5A ** FIG5S ***

Table 2 – Stratification and homogenization of groups of institutionalized elderly (male). * For long period of institutionalization; ** for average period of institutionalization; *** for a short period of institutionalization.

Male institutionalized Group (MIG)	Age	Subgroup (institutionalization time)
MIG1 from 60 to 64 years		MIG1L* MIG1A** MIG1S***
MIG2 from 65 to 69 years		MIG2L* MIG2A** MIG2S***
MIG3 from 70 to 74 years		MIG3L* MIG3A** MIG3S***
MIG4 from 75 to 79 years		MIG4L* MIG4A** MIG4S***
MIG5, > 80 years.		MIG5L* GMI5M** GMI5C***

DATA PROCESSING

The data will be tabulated and stored using Office Excel 2010 software. The statistical analysis will be done using BioEstat 5.0 software. The distribution analysis will be done through the Kolmogorov-Smirnov test; if the data have a Gaussian distribution, the Pearson correlation test will be used for the dependent and independent variables, and ANOVA will be used to compare intra and inter subgroups. In the event that they do not present a distribution close to normal, non-parametric tests will be used. We will adopt a level of significance of $\alpha = 0.05$.

EXPECTED RESULTS

It is expected that the theoretical hypotheses will be confirmed, showing that the time of institutionalization in Homes for the Aged is a factor of great importance for the postural balance associated with the chronological age of this population.

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