POSTURAL EVALUATION OF MEN AGED BETWEEN 60 AND 65 YEARS OLD OF PORTO ALEGRE-RS

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This is a population-based study and it is part of the Multidimensional Study of the Elderly population of Porto Alegre-RS. The aim was to evaluate the posture of men aged between 60 and 65 years old using a postural grid, classified as a qualitative method. The volunteer's posture was evaluated on Frontal plan (posterior view) and Sagittal plan (right view). The results demonstrated that most volunteers presented an erect head and cervical column. Fifty one percent had the right shoulder more elevated. Deviations of thoracic and lumbar columns and pelvis were not prominent in the population studied. Upper limbs were normally aligned in 26% of volunteers. Geno varus posture was present in 18,5%. The evaluation of the images obtained in the Sagittal plan indicated that 48% of the volunteers presented a lordotic-kyphotic posture.

KEY WORDS: postural deviations, aging, population-base study.

INTRODUCTION:

Postural deviations on the elderly have several causes, including life style and degenerative diseases (i.e., osteoporosis). The anthropometric evaluation of posture is an important tool for health professionals. It can be used to study patient's health risks with low cost. This technique can also be applied to large populations (Dunk et al., 2004 and Silva, 2005).

The aim of this study was to evaluate the erect or standing posture of elderly men aged between 60 and 65 years old who live in Porto Alegre-RS, using the Kendall's et al. (1995) adapted method by means of a posture grid.

METHOD:

Data Collection: The project was approved by the Research Ethical Committee of PUCRS and each volunteer signed the consent form prior to the beginning of the experiment.

Twenty-seven volunteers, aged 60 to 65 years, participated in this study. They were chosen randomly among the Porto Alegre-RS male population.

The volunteer was asked to remain in the standing position without any external help or support on a platform behind a posture grid during a brief period for pictures to be taken. The volunteer was wearing only his underwear or was completely naked.

The equipment used to evaluate his posture was a digital photographic camera (Sony) connected to a tripod (Sunpak ®, 7001 Dx), which was located in front of the posture grid and perpendicular to the central line of the equipment (distance of 2.6m). A series of photographs was then taken at the Frontal plan (posterior view) and the Sagittal plan (right view) and submitted later for analysis.

The methodology used for the photograph analysis was adapted from the Kendall's et al. (1995) proposal. The posterior view evaluated the positioning of the head, shoulders, cervical, thoracic and lumbar columns, pelvis and lower limbs. The right view classified the posture as: ideal alignment, lordotic-kyphotic, flat low back and sway back posture.

Data Analysis: Descriptive statistics were applied using Software (Microsoft® Excel 2003).

RESULTS:

Tables 1, 2, 3 and 4 show the results related to position of the head and cervical columns, shoulder alignment and thoracic-lumbar column alignment, respectively, based on the Frontal plan evaluation.

Table 1 Head position.

Head Position	Inclined to right	Inclined to left	Rot. to right	Rot. to left	Incl. and rot. to right	Incl. and rot. to left	Erect Position
Deviation Incidence (%)	25,90	14,90	0	11,10	7,40	3,70	37

Table 2 Cervical column position.

Cervical Column Position	Convex to right	Convex to left	Concave to right	Concave to left	Erect Position
Deviation Incidence (%)	3,70	3,70	14,80	0	77,80

Table 3 Shoulder alignment.

Shoulder Alignment	Right Up	Right Down	Aligned
Deviation Incidence (%)	51,85	33,33	14,82

Table 4 Thoracic-Lumbar Column Alignment.

Thoracic-Lumbar Column Alignment	Concave thoracic to right side	Concave thoracic to left side	Concave lumbar to right side	Concave lumbar to left side	Concave thoracic to left side and concave lumbar to right side	Concave thoracic to right side and concave lumbar to left side	Erect Position
Deviation Incidence (%)	14,81	7,42	18,52	3,70	3,70	3,70	48,15

Figures 1 and 2 illustrate the results of the Frontal plan in relation to pelvis deviation and lower limbs alignment, respectively.
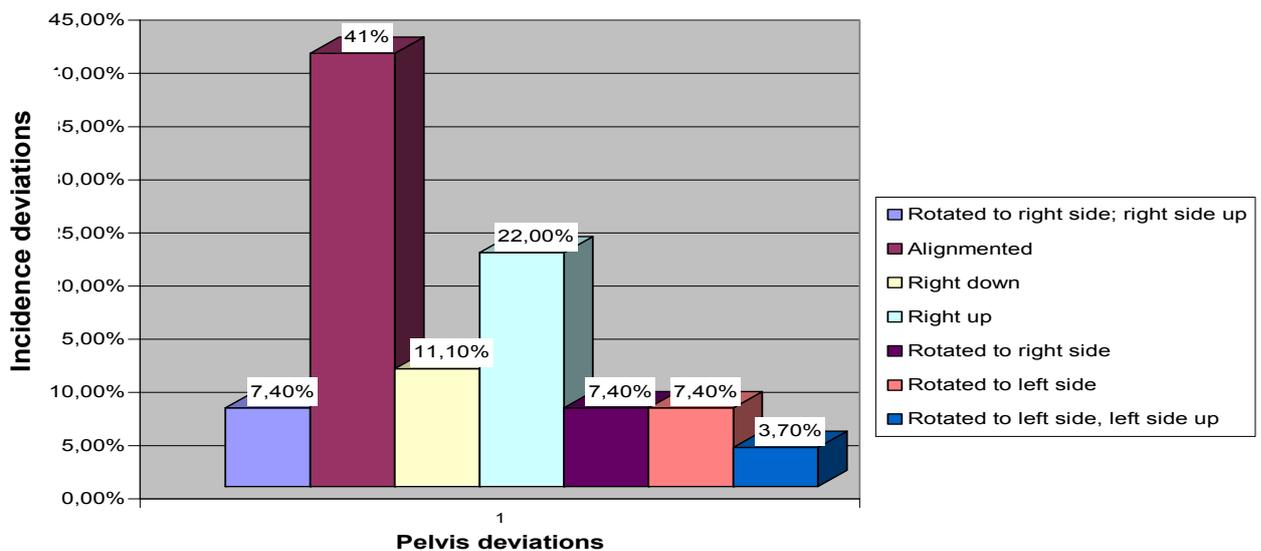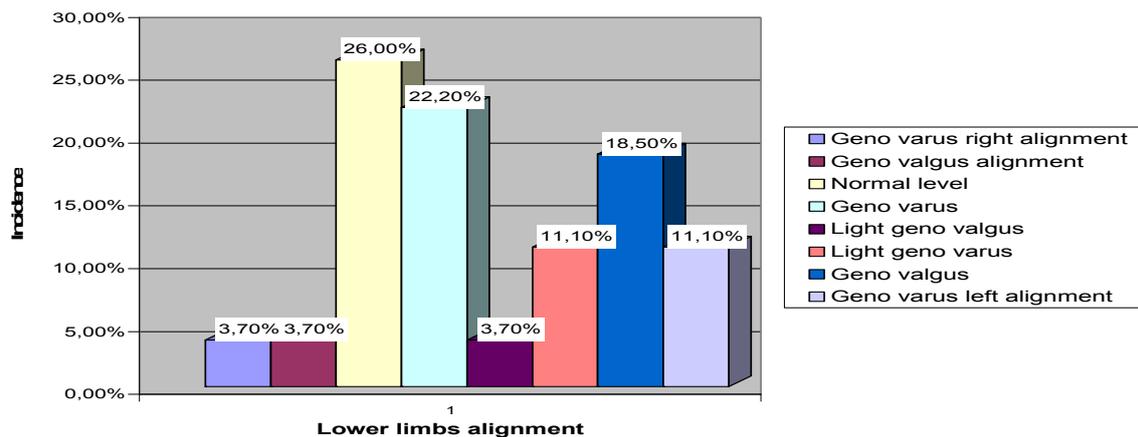

Figure 1: Pelvis alignment.

Figure 2: Lower limbs alignment.

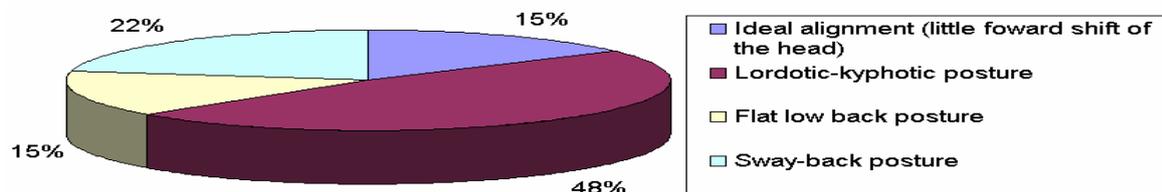Figure 3 shows the results of the sagittal plan evaluation.

Figure 3: Analysis of Sagittal plane alignment.

DISCUSSION:

Aging is a complex phenomenon. It compromises the quality of life and the independency of old people (Carvalhães Neto, 2005). The most prominent causes are alterations of the musculoskeletal system and diseases that affect the nervous system (Hough, Barry & Eathorne, 1997). It is well known that the elderly population is increasing worldwide. Therefore, studies dedicated to evaluate old people are very important for the elaboration of public politics for the third-aged population.

Clinical postural evaluation can be useful to help health professionals in the identification of any postural alteration and in the definition of the best treatment for a specific condition. Despite the fact that the posture grid only gives a qualitative evaluation of posture, this method has many advantages. It can be easily used by the health professional, has low cost, is time-effective and has been proved to be useful as a diagnostic tool for many medical conditions.

Carvalhães Neto (1999) pointed out that the column of old people can be modified along the years changing some anatomic structures and generating instability. This instability can affect other body structures, such as the pelvis, which might result in some sort of discomfort or pain. In this study, 22% of the elderly population studied presented misalignment of the pelvis (Figure 1) that can be attributed to deformities of other bone structures, like the column or the lower limbs.

The 20% geno varus knee found in this study might imply the presence of degenerative rheumatic diseases, such as arthrosis, which are very commonly encountered in patients above 60 years of age.

CONCLUSION:

This study was designed to evaluate the anthropometric posture profile of the elderly male population that live in Porto Alegre-RS by means of a qualitative method. Results presented

in this paper might motivate the use of this technique as a clinical tool for the identification of degenerative diseases, which are a common cause of discomfort, pain and lack in the quality of life of third-aged individuals.

The elderly Brazilian population has been increasing every year, according to IBGE (2005). Studies, such as this, are essential for a better understanding of the old population profile in Brazil. These studies will be a milestone for the development of new and more effective public politics, as well as being useful indicators for the areas most in need of financial and human resources.

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