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RESEARCH

Alterações podais e mobilidade em idosos atendidos em um ambulatório de geriatria

Podal changes and mobility in elderly assisted in geriatric outpatient clinic

Modificaciones podales y movilidad en ancianos asistidos en un ambulatorio de geriatría

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ABSTRACT

Objective: to determine the most frequent podal changes and their harm in the mobility in elderly outpatients. **Method:** this descriptive study was conducted with 121 elderly people who were treated in a geriatric outpatient clinic of a university hospital. Data were collected through interviews subsidized by structured tool and analyzed using descriptive and inferential statistics. **Results:** we observed high incidence of feet problems, especially in women and the young elderly, highlighting foot pain in the majority of respondents. There was also a predominance of elderly with partial independence. **Conclusion:** it is identified the need for special attention to the health of aged people who reports pain in feet, since this tends to restrict their usual activities, causing decreased quality of life, immobilization and possible falls. **Descriptors:** Foot, Elderly, Assessment.

RESUMO

Objetivo: verificar alterações podais mais frequentes e o prejuízo destas na mobilidade de idosos em atendimento ambulatorial. **Método:** estudo descritivo, realizado com 121 idosos que foram atendidos em um ambulatório de geriatria de um hospital universitário. Os dados foram coletados através de entrevista subsidiada por instrumento estruturado e analisados por meio de estatística descritiva e inferencial. **Resultados:** verificou-se alta incidência de problemas podais, especialmente nas mulheres e idosos jovens, destacando a ocorrência do pé doloroso na maioria dos entrevistados. Houve também predominância de idosos com independência parcial. **Conclusão:** identifica-se a necessidade de atenção especial à saúde do idoso que relata dor nos pés, visto que este tende a restringir suas atividades habituais, causando diminuição da qualidade de vida, imobilização e possíveis episódios de quedas. **Descritores:** Pé, Idoso, Avaliação.

RESUMEN

Objetivo: verificar las modificaciones podales más frecuentes y el perjuicio de estas en la movilidad de ancianos en una clínica geriátrica. **Método:** estudio descriptivo, realizado con 121 ancianos que fueron asistidos en un ambulatorio de geriatría de un hospital universitario. Los datos fueron recolectados a través de entrevistas subvencionadas por instrumento estructurado y analizados mediante estadística descriptiva e inferencial. **Resultados:** se verificó alta incidencia podales, especialmente entre las mujeres y ancianos jóvenes, destacando la ocurrencia del pie doloroso en la mayoría de los encuestados. También hubo un predominio de pacientes de edad avanzada con independencia parcial. **Conclusión:** se identifica la necesidad de prestar especial atención a salud del anciano que relata dolor en los pies, ya que este tiende a restringir sus actividades diarias, causando disminución de la calidad de vida, inmovilización y posibles episodios de caídas. **Descriptores:** Pie, Anciano, Evaluacion.

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INTRODUCTION

Population aging is one of the most important demographic and social changes observed in different geographical settings, occurring in a very fast pace, especially in developing countries, such as Brazil.[1] Studies show that aging of Brazilian population tends to increase significantly in the coming decades. It is estimated that in 2025, approximately 14.2% of the population are elderly.[2]

Associated with this new population scenario, the epidemiological transition is highlighted, in which there is increased incidence of chronic-degenerative diseases, which may be accompanied by sequelae, which limit the functional performance and may generate dependence. Approximately 80% of people over 65 have at least one chronic health problem and 10%, at least five.[3]

From a biological perspective, aging is a dynamic, progressive and physiological process accompanied by morphological and functional modifications, as well as biochemical and psychological changes, resulting in decreased functional reserve of organs and systems.[2] It should be noted that lifestyle commonly interact with genetics, making the consequences of aging variable from individual to individual.

Among the main concerns about the health stemming from longevity, we stand out the changes in the anatomical and physiological structures of the feet, which can interfere on functional capacity and on quality of life.[4] Nevertheless, for every three elderly living in the community, at least one has podal problems, and the prevalence is even higher in those who live institutionalized.[5]

Epidemiological studies show that podal problems affect about 80% of the elderly population and women have about twice more podal problems classified as moderate to severe. Among podal problems, it appears that foot pain is the fourth most common reason for discomfort in the elderly; however, few elderly people seek help and treatment for their feet problems, because they think such problems are an inevitable consequence of the aging process.[5]

The changes that occur in the feet of the elderly may be due to systemic diseases, march disorders and injuries of the foot that compromise the integrity of the nails, skin, nerves, vessels and bony structures.[6] It was established that podal problems have a high prevalence among the elderly, having a significant impact on mobility and quality of life. It is clear that the hallux valgus, deformity in toes, and thickening and callosities on the sole of the foot are injuries that often result in pain, affecting mobility and balance, increasing the risk for falls.[7-9]

Nevertheless, it is noteworthy that despite the relevance of the problem there are few studies in the Brazilian context that identify the main foot problems evidenced by the elderly, particularly in the health care setting, in order to subsidize the care planning and

implementation of early interventions aimed at maintaining their functionality, aspects often neglected in the context of care.

From these reflections, the relevance of this study is justified for the need for increasingly broad knowledge about the major podal issues affecting the elderly. Therefore, this present study has the objective of verifying more frequent podal changes and the loss of mobility in these elderly patients assisted in outpatient care.

METHOD

This is a descriptive study conducted with elderly outpatients of a geriatric care center in a university hospital in the city of João Pessoa - PB. The sample was probabilistic, selected by simple sampling technique. For the calculation, it was considered the following formula: n = Z2 PQ/a2, in which n is the minimum sample size; Z reduced variable; P probability of finding the studied phenomenon; Q 1-P; A desired accuracy. Being adopted A equal to 50%, and sampling error parameter of 5% and level of confidence 1%.

According to data from the clinic, there were 175 seniors registered in January 2013. After the completion of the calculations, the initial sample was composed of 121 seniors. Respondents were randomly selected according to the spontaneous demand of the service.

As to the criteria for inclusion, older who reported foot pain, as well as those with scores greater than 13 (illiterate) and 17 (literate) the Mental State Mini Examination - MSME[10], without compromising speech and/or hearing that could prevent those from responding to interview were part of the study. The study excluded those with moderate/severe cognitive impairment, amputations and/or use of prosthetic limbs; sequelae of stroke; Parkinson's disease; fractures in the lower member and/or column, as well as those who were using a wheelchair. All participants signed an informed consent form and after this, data collection instrument was applied by interviewers.

The data was collected through structured interviews, using, besides questions relating to socio-demographic indicators, Foot Problems Assessment to Older People Scale.[12] This scale was developed by a group of Australian researchers, which was translated and validated for the Brazilian reality.[13] It has as main objective to verify the podal problems and record the presence or absence of pain in the feet through dichotomous questions. The sum of each observation generates the final score. The grading of hallux deformities was performed according to the Manchester Scale, developed by Garrow.[14] The test consists of comparing the feet of the elderly with a sheet containing photographic representation of the four degrees of deformities.

As regards mobility and balance, Time up and go test was used, quantifying functional mobility in seconds by the time the individual performs the task. The purpose of the test is to assess sitting balance, transfers from sitting to standing position, stability

while walking and changes in the course of the march, without using compensating strategies. It is considered normal for older performance time between 10.01 and 20 seconds, however, above 20.01 seconds spent to perform the task, it is necessary more detailed assessment of the individual to assess the degree of functional impairment. Independent subjects, without balance disorders, perform the test in 10 seconds or less; with independence in basic transfers, spend 20 seconds or less. The individuals that require more than 30 seconds to perform the test are dependent on many activities of daily living and mobility.[15]

Data analysis was carried out on a quantitative approach, using descriptive statistics for the variables of univariate nature, using the computer system Statistical Package for the Social Sciences – SPSS, version 20.0, which is adequate to achieve the goals of the study and allows precision and generalizability of results.

Ethical aspects that regulate research involving human subjects, arranged in Resolution No. 196 of the National Health Council of October 10, 1996, were observed.[16] The project was evaluated and approved by the Ethics Committee of the University Hospital Lauro Wanderley, under Case No. 28/12 and CAAE 03541712.1.0000.5183.

RESULTS AND DISCUSSION

Among the older respondents, it was found that 103 (85.1%) were female, predominantly aged between 60 and 69 years old (51.2%). Regarding marital status, 51.2% were married, as shown in Table 1.

Table 1 – Distribution of socio-demographic characteristics of the elderly in a geriatric outpatient clinic. João Pessoa - PB, 2013 (n=121).

Variables	Categories	n	%
Sex	Female	103	85,1
	Male	18	14,9
Age Group	60 to 69	62	51,2
	70 to 79	46	38,1
	80 or more	13	10,7
Marital Status	Married	62	51,2
	Widower	34	28,1
	Single	13	10,7
	Divorced	12	10,0
Total		121	100

With respect to the podal main issues highlighted, we found that 94.2% of elderly respondents related foot pain, 54.5% lacked in hallux valgus deformities. Regarding the toes, only 26.4% had thickening or callus, and 43% had deformities. Thickening or calluses on the plantar surface was affecting approximately 60.3% of the elderly respondents.

Table 2 – Distribution of podal problems revealed by the elderly investigated. João Pessoa - PB, 2013 (n= 121).

Variables	Categories	n	%
Foot Pain	Yes	114	94,2
	No	07	5,8
Hallux valgus	No deformities	66	54,5
	Mild deformity	35	28,9
	Moderate deformity	11	9,1
	Severe deformity	09	7,4
Thickening or calluses on toes	Yes	32	26,4
	No	89	73,6
Deformities of toes	Yes	52	43,0
	No	69	57,0
Thickening or calluses on the plantar surface	Yes	73	60,3
	No	48	39,7
Total		121	100

Regarding the performance of older people on TUG, we identified that this varied between 9 and 30 seconds, with an average of 13.27 seconds, and standard deviation of 3.69 for testing. According to the proposed classification, it was found that 88 (72.7%) elderly had partial independence. No statistically significant correlation was identified between the occurrence of feet problems and performance on the TUG.

Table 3 – Distribution of performance on TUG among the subjects of the study. João Pessoa - PB, 2013 (n= 121).

	n	%
Independent	30	24,8
Partial independence	88	72,7
Dependence	03	2,5
Total	121	100

The results obtained in this study showed that women presented more podal problems compared to males. This trend is confirmed by a study with elderly residents in the community, where it was found that women have been using smaller and narrower shoes, with reduced total area compared to men's shoes, justifying the occurrence of feet problems. Also, wearing shoes substantially narrower than the foot has been associated with

the occurrence of callus on the feet, deformity of the hallux valgus and foot pain.[8] Another aspect worth mentioning is pain tolerance. Women report feeling more pain than men, and consequently seek more health care.[16]

Regarding age, there was a predominance of 51.2% of seniors from 60 to 69 years old. Similar study conducted in outpatient clinics found that 43% of the interviewees belonged to the age group mentioned before.[16] It is noteworthy that studies show little association between age and podal problems. However, it is important to remember that there is significant relationship between podal changes, especially foot pain, and the risk of falls among elderly people aged 62 or over resident in the community, highlighting it as important predictor for the comprehensive care of the elderly.[17]

Regarding podal problems revealed by the elderly, studies that evaluate the feet often take as their starting point the question that refers to pain.[16,18] The occurrence of foot pain is closely associated with the lower stage of wellness, changes in march, balance and mobility, which may contribute to functional disability and increased risk of falls in this population.[16]

According to literature, the most common deformity found in the feet of the elderly is the hallux valgus, which affects the first metatarsophalangeal joint and can be defined as a lateral deviation of the hallux associated with varus of the first metatarsal, producing a medial bony protrusion. Extrinsic factors are involved in its genesis, such as pointy shoes and high heels, and intrinsic factors, such as heredity, varus of the first metatarsal bone, ligament laxity, flat feet, etc.[19]

It was identified that 28.9% of the elderly had mild hallux valgus, 9.1% moderate and 7.4% severe, corroborating study conducted with114 elderly patients who had 29%, 14% and 5.2% mild, moderate and severe hallux valgus, respectively.[12] Another study confirmed a significant association of hallux valgus with reduced physical function, general and mental health, social interaction and increased bodily pain.[20]

As regards the thickening and callosity of the feet, these are present in nearly all the elderly subjects.[20] In the present study, it was observed that 60.3% of respondents had such deformities. A similar result was found in a study that evaluated podal problems of the elderly and its relationship with functional mobility and balance in the elderly in São Paulo.[12]

Is relation to deformities in the toes, literature shows a lower proportion of cases, as observed in the present study, in which most of the elderly respondents did not presented such deformities. Changes in the toes are strongly related to shoes used throughout life.[21]

In this context, it is important to note that during walking, the feet are the point of support and distribution of whole body weight. This feature makes them more susceptible to injuries and deformities such as foot pain, hallux valgus, and thickening and callosity in feet discussed here. These are seen by older people as something common to aging, but can cause harm to the health of the elderly, such as decreased strength, coordination, increased postural instability, risk of falls, disability and consequent reduction in quality of life.[16,18]

It was evident that the average for the realization of TUG among the elderly was 13.27 seconds, corroborating similar survey, that showed average 12.21 seconds.[22] The

functionality of the elderly has been the subject of numerous studies since its maintenance may have implications for quality of life and autonomy, allowing the individual to remain in the community, enjoying his independence.[23] Researchers believe that the completion of the test in 10 seconds is the time considered normal for healthy, independent adults, values between 11 to 20 seconds are expected for fragile seniors or with disabilities, with partial independence and low risk of falls, and above 20 seconds, it suggests that the elderly presents important deficit of physical mobility. The same authors determine a performance of up to 12 seconds as normal time of testing for seniors living in the community.[24]

It was found in this study that most seniors had a satisfactory index, presenting predominantly partial independence. This finding can be explained by the profile of the population studied, as well as being residents of the community, they needed to move, many unaccompanied, to the clinic for consultations, as evidenced in similar research that corroborates this finding.[25 - 6]

No significant correlation was identified between performance on the TUG and podal changes, probably because other factors must interfere in mobility, such as pain and changes in the knees and hips and association of chronic diseases.[27] Similar studies have shown that elderly with significant podal changes walk more slowly compared those having no such problems.

CONCLUSION

The results of this study show that women and younger elderly had significant podal problems with increased occurrence of foot pain and callosity or thickening of the plantar surface. In relation to performance in the TUG, it was found that the majority of the study population had functional independence without significant changes in maintaining mobility.

It is noteworthy that the podal problems are common, especially among the elderly population, and require skilled care for correct diagnosis. Although relevant consequences, such as functional decline and decrease or loss of ability to walk, problems that affect the feet are still seen as inherent problems of aging, not getting proper treatment. Implementation of practices and measures to prevent these problems, as well as early intervention, is required, reducing the risk of restriction of normal activities, functional disability, falls and the elderly dependency.

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