Evaluation of the functional capacity of elderly users of primary care in the municipality of Diamantina, Minas Gerais, Brazil

Avaliação da capacidade funcional de usuários idosos da atenção primária no município de Diamantina, Minas Gerais, Brasil

Bruna de Cássia Ávila
Master in Dentistry
Institution: Pontifícia Universidade Católica de Minas Gerais (PUC - Minas)
Address: Avenida Dom José Gaspar, 500, Coração Eucarístico, Belo Horizonte – MG, CEP: 30535901
E-mail: bruuu.avila@gmail.com

Lyssa Esteves Souto Capuchinho
Master in Health, Society and Environment
Institution: Universidade Federal dos Vales do Jequitinhonha e Mucuri (UFVJM)
Address: Rua da Glória, 187, Centro, Diamantina, Minas Gerais, CEP: 39100-000
E-mail: lyssaesteves@yahoo.com.br

Thiago Caldeira Diniz
Bachelor in Dentistry
Institution: Universidade Federal de Minas Gerais (UFMG)
Address: Rua Peçanha, 161, Carlos Prates, Belo Horizonte – MG, CEP: 30710040
E-mail: thiago.caldeira.diniz@gmail.com

Marthina Conegundes Gomes Pinto
Bachelor in Dentistry
Institution: Pontifícia Universidade Católica de Minas Gerais (PUC - MINAS)
Address: Avenida Dom José Gaspar, 500, Coração Eucarístico, Belo Horizonte – MG, CEP: 30535901
E-mail: marthinacg@hotmail.com

Luciana Aparecida de Morais Brígido
Master in Health Society and Environment
Institution: Universidade Federal dos Vales do Jequitinhonha e Mucuri (UFVJM)
Address: Rua da Glória, 187, Centro, Diamantina, Minas Gerais, CEP: 39100-000
E-mail: luciana.moraes@ufvjm.edu.br
ABSTRACT
Population aging is a growing phenomenon that deserves to be highlighted in the current situation in which the country and the world find themselves. The increase in life expectancy has brought a new challenge to the elderly, which is to age with quality of life, physically and mentally healthy. The functional capacity as well as the socioeconomic and demographic dimensions must be investigated so that this information provides support for the rehabilitation and recovery of this segment of the population. This study was a quantitative, cross-sectional and descriptive research, in which a questionnaire was used to characterize the elderly regarding their demographic, social and economic condition, together with internationally validated questionnaires that assessed functional capacity (Katz and Pfeffer). The elderly interviewed in this study were mostly female, aged between 60 and 93 years old, retired, married, most of them did not have health insurance, but had an illness diagnosed by a doctor; As for functional capacity, the majority of the sample proved to be independent. Understanding the aging process and seeking alternatives for providing care to the elderly today represents a challenge for everyone who works in public health services and society as a whole.

Keywords: functional capacity, elderly, aging.

RESUMO
O envelhecimento da população é um fenômeno crescente que merece ser destacado na atual situação em que o país e o mundo se encontram. O aumento da esperança de vida trouxe um novo desafio aos idosos, que é envelhecer com qualidade de vida, saudável física e mentalmente. A capacidade funcional e as
dimensões socioeconômica e demográfica devem ser investigadas para que essas informações deem suporte à reabilitação e recuperação desse segmento da população. Trata-se de uma pesquisa quantitativa, transversal e descritiva, na qual foi utilizado questionário para caracterizar idosos quanto à sua condição demográfica, social e econômica, além de questionários validados internacionalmente que avaliaram a capacidade funcional (Katz e Pfeffer). Os idosos entrevistados neste estudo eram majoritariamente do sexo feminino, com idade entre 60 e 93 anos, aposentados, casados, a maioria não possuía seguro de saúde, mas possuía doença diagnosticada por médico; quanto à capacidade funcional, a maioria da amostra mostrou-se independente. Compreender o processo de envelhecimento e buscar alternativas para a prestação de cuidados aos idosos hoje representa um desafio para todos que trabalham em serviços públicos de saúde e na sociedade como um todo.

**Palavras-chave:** capacidade funcional, idoso, envelhecimento.

### 1 INTRODUCTION

Recently, the constant demographic growth of the elderly population in the world has been highlighted, whether due to scientific-technological improvements or improved living conditions (CHINA, *et al.*, 2021). Population aging is a phenomenon that has drawn the attention of researchers and authorities from different areas of knowledge, and as this is an increasingly discussed topic in the current context, it deserves space for analysis and discussion.

Many criteria are adopted with regard to the assessment of active aging (MATSUDO, MATSUDO & NETO, 2001). The sociodemographic and general health condition becomes even more relevant for this segment of the population; Social factors such as loneliness, social isolation, illiteracy and lack of education, mistreatment, and conflict situations and their life history can also contribute to a decrease in their functionality (WHO, 2005). If people are living longer, one must carefully examine how they are living, that is, with what level of quality they are going through this stage of life.

In parallel with the increase in life expectancy, changes occur in the representation of the health of this population, a fact that deserves care, as it is a population that needs conservation and progress in quality of life (MIRA, *et al*., 2019). As old age has well-known particularities, such as chronic illnesses and
frailties, higher costs, fewer social and financial resources, among others (VERAS & OLIVEIRA, 2018), functional capacity has been identified in the literature as one of the main components of well-being, establishing a new health paradigm for the aging population (BRITO, MENEZES, & OLINDA, 2016). Being active and participatory after the age of 60, according to one's own limitations and potential, in addition to being considered an achievement of society, is a right that must be guaranteed to all citizens (ILHA, et al., 2016).

Therefore, the main objective of this research was to describe the sociodemographic profile of the elderly and evaluate their functional capacity through specific instruments, which can contribute to direct actions towards groups that most need attention from health services.

2 METHODS

This study was developed using a quantitative, transversal and descriptive methodology; it was submitted to the Research Ethics Committee (CEP) of the Federal University of Vales do Jequitinhonha and Mucuri (UFVJM) and then authorized by the Municipal Health Department (SMS) of the Municipality of Diamantina; this being approved through opinion number 3.325.680.

This research included elderly people (aged 60 years or over), residents of the municipality of Diamantina, registered in the single health system, and users of the city's respective urban UBS's. Institutionalized elderly people (living in nursing homes, hospitals, prisons) were excluded; those identified by the study as duplicates and those who, for health reasons, were unable to answer the interview.

Questionnaires validated by national and international studies were used, widely used to collect epidemiological data, with proven acceptance and expression of reliable information. The questionnaires used were: Sociodemographic Characterization of the Elderly Questionnaire, Katz Scale and the Pfeffer Functional Activities Index.

The Katz Index has six items that measure the individual's performance in self-care activities, or IADL's (individual activities of daily living): bathing,
dressing, going to the bathroom, transferring, being continent (ability to total control of urination and defecation) and eating, which follow a hierarchy of complexity (Katz et al., 1963). The Pfeffer Index consists of items related to the individual's ability to perform ADL and cognitive/social functions such as shopping, preparing food, keeping up to date with current affairs, personal finances, understanding the environment in which they live, paying attention on radio and television programs and discuss them. The lower the score obtained by the individual, the greater their independence (Pfeffer et al., 1982).

3 RESULTS

The results obtained through this research revealed a population that was mostly female, with a predominance of ages between 60 and 70 years, with a small percentage of long-lived elderly people (those aged 80 or over); most self-identify as white or mixed race, and when asked about their marital status, the majority reported being married. Regarding the level of education, it was noticed that in short, the population attended public schools for as long as they had access to education, and basically live on a minimum wage, highlighting that the sample is mostly retired. (Table 1)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Elderly</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feminine</td>
<td></td>
<td>220</td>
<td>52,4</td>
</tr>
<tr>
<td>Masculine</td>
<td></td>
<td>200</td>
<td>47,6</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(60.70)</td>
<td></td>
<td>228</td>
<td>54,2</td>
</tr>
<tr>
<td>(71.80)</td>
<td></td>
<td>124</td>
<td>29,6</td>
</tr>
<tr>
<td>(81.90)</td>
<td></td>
<td>66</td>
<td>15,8</td>
</tr>
<tr>
<td>(91, +)</td>
<td></td>
<td>2</td>
<td>0,4</td>
</tr>
<tr>
<td>Color</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td></td>
<td>175</td>
<td>41,6</td>
</tr>
<tr>
<td>Brown</td>
<td></td>
<td>156</td>
<td>37,3</td>
</tr>
<tr>
<td>Black</td>
<td></td>
<td>79</td>
<td>18,8</td>
</tr>
<tr>
<td>Yellow</td>
<td></td>
<td>7</td>
<td>1,6</td>
</tr>
<tr>
<td>Indigenous</td>
<td></td>
<td>3</td>
<td>0,7</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did not attend</td>
<td></td>
<td>32</td>
<td>7,6</td>
</tr>
<tr>
<td>All in public school</td>
<td></td>
<td>352</td>
<td>83,8</td>
</tr>
</tbody>
</table>
When evaluated according to their capacity in relation to functional activities, a prevalence of elderly people considered to be independent was noticed; where the vast majority claim they do not need help or are able to carry out the activities on their own. (Table 2), (Graph 1).

Table 2. Scale for individual functional assessment (KATZ scale - IADL). Diamantina, 2023

<table>
<thead>
<tr>
<th>Activity</th>
<th>Dependent (%)</th>
<th>Independent (%)</th>
<th>Did not answer (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>To have a bath</td>
<td>29</td>
<td>6,7</td>
<td>92,8</td>
</tr>
<tr>
<td>Dress up</td>
<td>56</td>
<td>13,3</td>
<td>362</td>
</tr>
<tr>
<td>Use of the toilet</td>
<td>34</td>
<td>8,1</td>
<td>384</td>
</tr>
<tr>
<td>Transfer</td>
<td>26</td>
<td>6,2</td>
<td>392</td>
</tr>
<tr>
<td>Continence</td>
<td>95</td>
<td>22,6</td>
<td>323</td>
</tr>
<tr>
<td>Food</td>
<td>30</td>
<td>7,1</td>
<td>388</td>
</tr>
</tbody>
</table>

Source: Author’s Data, 2023.
The number of elderly people interviewed who reported some dependence in relation to the functional activities in the questionnaires was in fact small, considering the number of independent people; However, it is clear that activities such as “remembering appointments, family events and holidays”, “Paying attention, understanding and discussing television programs, newspapers or magazines” and “preparing your own food” proved to be the most difficult tasks among the participants of the research. (Table 2)


<table>
<thead>
<tr>
<th>Activity</th>
<th>Dependent</th>
<th>%</th>
<th>Independent</th>
<th>%</th>
<th>Did not answer</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handle your own money</td>
<td>68</td>
<td>16,2</td>
<td>350</td>
<td>76,2</td>
<td>2</td>
<td>0,5</td>
</tr>
<tr>
<td>Able to buy clothes, food and things for the house alone</td>
<td>57</td>
<td>13,6</td>
<td>361</td>
<td>85,9</td>
<td>2</td>
<td>0,5</td>
</tr>
<tr>
<td>Able to heat water for coffee and put out the fire</td>
<td>64</td>
<td>15,2</td>
<td>354</td>
<td>84,3</td>
<td>2</td>
<td>0,5</td>
</tr>
<tr>
<td>Able to prepare food</td>
<td>75</td>
<td>17,8</td>
<td>343</td>
<td>81,7</td>
<td>2</td>
<td>0,5</td>
</tr>
<tr>
<td>Able to keep up to date with current affairs, community and neighborhood events</td>
<td>65</td>
<td>15,5</td>
<td>353</td>
<td>84,0</td>
<td>2</td>
<td>0,5</td>
</tr>
<tr>
<td>Able to pay attention, understand and discuss a television program, newspaper or magazine</td>
<td>79</td>
<td>18,8</td>
<td>339</td>
<td>80,7</td>
<td>2</td>
<td>0,5</td>
</tr>
<tr>
<td>Able to remember appointments, family events and holidays</td>
<td>80</td>
<td>19,0</td>
<td>338</td>
<td>80,5</td>
<td>2</td>
<td>0,5</td>
</tr>
<tr>
<td>Able to handle own medicines</td>
<td>67</td>
<td>15,9</td>
<td>351</td>
<td>83,6</td>
<td>2</td>
<td>0,5</td>
</tr>
</tbody>
</table>
Regarding ADL's, described by the Pfeffer index, there was also a significant prevalence of patients considered independent, carrying out activities of daily living without someone's assistance, (Table 3), (Graph 2); greater emphasis was placed on the item “incontinence”, where a higher percentage was dependent on other activities, which can be explained by several factors associated with old age.

4 DISCUSSION

Population aging is characterized by the progressive increase of people aged 60 or over to the detriment of the general population and the increase in longevity (CAMARGOS, et al., 2008); This is a fact that has been occurring in Brazil and around the world and has become impossible to ignore, since, as a current trend, we have a growing number of elderly individuals who, despite living longer, have characteristic health conditions, which contributes to greater search for health services, with high costs and risks for the development of functional disabilities (VERAS & OLIVEIRA, 2018).

Age is one of the most important factors of social differentiation, alongside sex, color and social class (MOREIRA, 1998); This study had an approach to the elderly population and its peculiarities, with a sample of individuals all aged 60 or over (ranging from 60 to 93 years), with a median of 69.3 years, where once again, a study with the elderly population can present what has been called “feminization of old age” (MARIN, et al., 2008; ROSENFELD, 2003; LUCHETTI, et al., 2010), with a mostly female sample (52.4%). When asked about color, 41.6% declared themselves white, followed by browns (37.3%) and blacks (18.8%); and in relation to their occupation, the highest percentage was retired (70.4%), followed by elderly people still working (23.5%), highlighting that 6.1%
do not have any activity, nor are they retired, having their expenses covered by other family members.

Functional capacity along with quality of life, well-being and independence are relevant factors regarding aging, and deserve to be highlighted when talking about increasing the longevity of the population. For elderly people to lead a life of independence and autonomy, it is essential to maintain functional capacity. This can be conceptualized as maintaining the ability to perform Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL) (CHINA, et al., 2021). Estimating levels of independence in Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL) reveal the individual's ability to take care of themselves and live independently, respectively. In Brazil, the prevalence of functional disability among the elderly is high, which is characterized by a process of loss of abilities to maintain daily tasks (CAMPOS et al., 2016). ADL explore the individual's dexterity to perform basic hygiene needs, dressing, going to the bathroom and even moving. However, IADLs analyze those skills that characterize independence in the community, such as preparing meals, using the telephone, shopping, using medications correctly, cleaning, walking around the neighborhood and managing your finances. However, several factors such as the presence of comorbidities and the aging process itself can lead to the elderly population becoming dependent on carrying out these activities (GAVASSO; BELTRAME, 2017).

Being able to perform IADL, for the elderly, means something every day and essential for their survival, keeping them involved in carrying out household chores and managing their own health care (FERREIRA, MEIRELES, & FERREIRA, 2018). In this work, a satisfactory condition of the interviewees was observed, where more than 70% (n=326) were considered independent in relation to IADL's; with emphasis on the items: “handles your own money” (76,2%) and “walking around the neighborhood and finding your way back home” (86,4%), were mostly independent, and a very low percentage presented dependence to carry out these activities; The items with the highest percentage of dependency presented were: “Able to prepare food” (17,8%), “Able to pay
attention, understand and discuss a television program, newspaper or magazine” (18.8%) and “Able to remembering appointments, family events and holidays” (19%); reiterating the findings of previous studies, Minosso, et al., (2010) and Giacomin, et al., (2008), who also observed dependencies and independence in these same areas in their elderly study populations.

When observing the results of the interviewees ADL’s, there is a greater dependence on continence (22.6%), followed by dressing (13.3%) and using the bathroom (8.1%), with transfer (6.2%) and bathing (6.7%), as the least reported when thinking about independence. In 2007, Duarte, Andrade and Lebrão had already explained an orderly regression of ADL as part of the physiological process of aging, when there would be a progressive loss of more complex functions to more basic ones, while the simpler and less complex functions would be retained for longer time, as we observed in these findings.

It is possible to suggest that the level of dependence on instrumental activities may occur mainly due to the insecurity of the elderly themselves in carrying out some activities that require greater coordination and skills, and, in addition, protection from family members who think that due to their age, the elderly should avoid carry out journeys alone or more complex activities to avoid greater risks to their well-being (SOUZA PINTO, et al., 2017). Regarding Instrumental activities of daily living (IADL’s), this sample stood out as mostly independent: 326 (77.2%), followed by partially independent (54) and totally dependent (38); corroborating the findings of Oliveira et al., (2012) who also found such information when assessing the dependence of the elderly.

Related to functional losses, there is a hierarchy in these losses, in which IADL are the first to be affected. Without adequate monitoring and meeting the health needs of the elderly, functional losses can compromise their autonomy, as well as their quality of life (FERREIRA, 2014).

The focus of health promotion in the elderly needs to be directed towards good physical, mental and social functioning, as well as the prevention of diseases and disabilities (CHINA, et al.; 2021). Therefore, understanding the health status and contentment of the elderly population, as well as their
independence to carry out routine activities deserves space for discussion, since longevity is only truly an achievement when it is accompanied by satisfaction and general well-being. The assessment of the functional capacity of the elderly makes interventions possible through health promotion, with specific actions that contribute to postponing disabilities, as well as rehabilitating those detected, resulting in a reduction in the number of dependents, culminating in a better quality of life, longer. The subsidies found in this study show that the topic in question has a high research potential to be explored and must be treated with responsibility and relevance.

5 CONCLUSION

This study can demonstrate that, through the use of scales and questionnaires, it was possible to identify, analyze and expose the socioeconomic, demographic and functional capacity of the elderly population. From this perspective, it was essential to observe the factors that limit and even end up suppressing the independence of the elderly in their daily lives, a fact that can guide the idealization of care actions in both the prevention and rehabilitation sectors.

This work was carried out with the support of the Coordination of Improvement of Higher Education Personnel – Brazil (CAPES); code of financing 001.
REFERENCES


MIRA, BC; FERREIRA, AMR; OZELA, CS; SANTOS, MIPO; PALMEIRA, IP; SILVA, SED Socioeconomic and behavioral determinants that permeate the active aging of elderly people in a Community Living Center. Online Research Journal Care is Fundamental, v. 11, no. 5, p. 1122-1128, 2019.


MARIN, MJS; CECILIO, LCO; PEREZ, A.; SANTELLA, F.; SILVA, CBA; GONÇALVES, F. JR.; et al. Characterization of medication use among elderly people in a Family Health Program unit. Cad Public Health, v. 24, no. 7, p. 1545-


