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ORIGINAL

Characterization of functional capacity in the elderly

Caracterización de la capacidad funcional en Adultos Mayores

Daisy Mesa Trujillo[1], Claudia de la Caridad Zayas Argos[1], Ana Iris Verona Izquierdo[2], Israel García Mesa[3], Abanis López Zamora[1]

[1]Universidad de Ciencias Médicas de Pinar del Río. Policlínico Comunitario "Elena Fernández Castro". Los Palacios. Pinar del Río, Cuba.
[2]Universidad de Ciencias Médicas de Pinar del Río. Dirección Municipal Salud. Los Palacios. Pinar del Río, Cuba.
[3]Escuela Nacional Salud Pública. La Habana, Cuba.

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ABSTRACT

Introduction: the evaluation of the elderly should be multidimensional with the inclusion of the physical, mental, social and functional areas.
Objective: to characterize the functional capacity of elderly people in Los Palacios clinic 4 during 2021.
Methods: cross-sectional descriptive research. Population: 212 elderly adults who met the inclusion criteria. ABSTRACT measures were used for qualitative data (absolute frequency relative percentage).
Results: age 60 - 64 (28,7 %), female sex (27,4 %) and consensual union were predominant. The predominant dispensary group was III (61,7 %), with prevalence of independence status for basic activities of daily living and for instrumented activities of daily living (IADLs), moderate dependence and frailty and falls as major geriatric syndromes predominated.
Conclusions: Functional capacity in elderly adults was characterized by state of independence for basic activities of daily living and instrumented activities.

Keywords: Elderly; Educational Intervention; Functional Capacity.

RESUMEN

Introducción: la evaluación del anciano debe de ser multidimensional con la inclusión del área física, mental, social y funcional.
Objetivo: caracterizar la capacidad funcional en adultos mayores del consultorio 4 Los Palacios durante el 2021.
Métodos: investigación descriptiva transversal. Población: 212 adultos mayores que cumplieron con los criterios de inclusión. Se utilizaron medidas de resúmenes para datos cualitativos (frecuencia absoluta relativa porcentual).
Resultados: predominaron las edades de 60 – 64 (28,7 %), el sexo femenino (27,4 %) y la unión consensual. El grupo dispensarial predominante fue el III (61,7 %), prevaleciendo el estado de independencia para las actividades básicas de la vida diaria y para las actividades instrumentadas de la vida diaria (AIVD) predominó la dependencia moderada y la fragilidad y caídas como grandes síndromes geriátricos.
Conclusiones: La capacidad funcional en adultos mayores se caracterizó por estado de independencia para actividades básicas de vida diaria e instrumentadas.

Palabras clave: Adultos Mayores; Intervención Educativa; Capacidad Funcional.

INTRODUCTION

The socio-economic progress has prompted an epidemiological transition, demographically characterized by a surge in the elderly population, accompanied by the corresponding social and healthcare needs and demands. [1,2] The aging process of the human body is a dual process, encompassing individual and collective dimensions, it transpires within each individual, yet it is influenced by societal factors and the quality of life. Therefore, within the domain of Primary Healthcare (PHC), our mission is to foster a culture of longevity, epitomized by the pursuit of living longer and augmented physical, social, and mental well-being.

In contemporary society, driven by the momentum of social progress, there is a quest for a proficient aging model, one that is not only utilitarian but also productive, capable of augmenting the quality of life within the elderly demographic. [1] According to the World Health Organization (WHO),[3] quality of life is defined as "an individual's perception of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards, and concerns". [3] It is evident that this constitutes a comprehensive construct intricately influenced by an individual's physical health, psychological well-being, level of autonomy, social relationships, and their interplay with significant environmental factors. Health in the elderly also encompasses functionality, comprised of three fundamental components: basic activities of daily living (ADLs), instrumental activities of daily living (IADLs), and mobility capacity.[4,5]

In Cuba, as life expectancy continues to climb and the aging of the population surges (21,6 % in 2021, as per the statistical yearbook), there is a concomitant escalation in mortality due to non-communicable chronic diseases. This trend is also noticeable at the provincial and municipal levels, as exemplified by Los Palacios, which reported an aging index of 21,4 % in 2021.[6]

The healthcare of older adults necessitates a multidisciplinary and intersectoral approach, engaging healthcare professionals who are committed to their well-being and proficient in collaborative teamwork aimed at promoting self-care practices. This facilitates the development of skills in patient and caregiver competencies, with the overarching objective of ensuring, in accordance with each patient's capacities, the prolongation of life with a focus on quality, as well as the restoration or preservation of health and personal development.[7]

The health and well-being of all citizens are paramount priorities for the Cuban government. Consequently, it is imperative to execute interventions directed at ameliorating the quality of life for this vulnerable population. However, the strategy to be embraced in each region should be customized to its distinctive attributes.[8] The elderly represent substantial consumers of healthcare resources out of necessity, given that this life stage frequently entails an aggregation of health conditions, substantiating the need for their care and assistance.

The reality of an aging population underscores the necessity to address the elderly based on the foundational principles of equity and quality. Although we may acknowledge the presence of individuals aged 80 and above who, with appropriate and high-quality healthcare, maintain their mental and functional acuity, the fact remains that, when a person of the same age presents with multiple health conditions and their illness progression is influenced by unfavorable functional, mental, or social determinants, the current healthcare structures fail to provide an optimal and comprehensive solution to their complex needs.[9]

Considering all the aforementioned factors, it becomes imperative to conduct a comprehensive investigation into characterizing the functional capacity of older adults with the aim of devising a suite of interventions that foster healthy aging.

METHODS

A cross-sectional descriptive study was executed at Family Doctor's Office (FDO) No.4, which is part of the Elena Fernández Castro Polyclinic, situated in the Los Palacios municipality of Pinar del Río province. The study spanned took place over the course of the year 2021 and the first half of 2022.

An observational, descriptive, cross-sectional study was conducted to profile the sample according to sociodemographic variables. The study encompassed the evaluation of the functional capacity of older adults and the identification of geriatric syndromes.

Definition of study population:

-Study population: A total of 212 older adults who conformed to the inclusion criteria.

Inclusion criteria:

-Willingness to participate in the study.
-Affiliation with the health area of FDO No. 14 and residence within that area.
-Attaining the age of 60 years or older.

Exclusion criteria:

-Not meeting the inclusion criteria.
-Presence of mental illnesses or a terminal illness that could impede the cooperation of the older adult.

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Exit criteria:

-Individuals who voluntarily opt to withdraw from the study or pass away during the research period.

Variables: age, sex, marital status, dispensary group (I: healthy, II: at risk, III: sick, IV: with sequelae) Functional capacity in basic activities of daily living (BADLs, according to the Barthel Index), Functional capacity in instrumental activities of daily living (IADLs, according to the Lawton and Brody Scale), Geriatric syndromes (immobility, falls, urinary/fecal incontinence, cognitive impairment, and frailty), as determined by the results of the Geriatric Functional Rating Scale (GFRS)[14].

Once the elderly individuals were included in the sample, data collection was carried out through the following methods:

Survey: This method was employed to collect general information about the elderly participants.

Instruments: A battery of instruments was employed to assess the presence of geriatric syndromes and functional capacity in older adults. This battery included the Geriatric Functional Rating Scale (GFRS), the Barthel Index, and the Lawton and Brody Scale.

Data collection techniques

A documentary observation approach was employed, which involved a comprehensive review of individual and family medical records of elderly patients within their medical offices. Semi-structured interviews were conducted at the patients' residences to ensure complete privacy. These interviews were facilitated using a pre-prepared questionnaire and administered by trained personnel. The gathered information was subsequently processed through an automated database created in Microsoft Excel for Windows 2000, with statistical analysis conducted using SPSS software, version 10. The analysis primarily relied on descriptive statistical techniques, involving the calculation of both absolute and relative frequencies.

Ethical aspects

In this study, individual and family medical records were utilized, and the data was processed by healthcare professionals. Before conducting the survey, informed consent was obtained from the geriatric patients who participated in the study. This process adhered to the fundamental principles of medical bioethics in human research.

RESULTS

The age group of 60 to 64 years (28,8 %) and the female sex (53,3 %) exhibited a higher prevalence.

Table 1. Distribution of older adults by age and sex, Medical Office No. 4, Los Palacios, 2022

Age (years)	Female		Male		Total	
	No.	%	No.	%	No.	%
60-64	31	27,4	30	30,4	61	28,8
65-69	26	23,0	24	24,3	50	23,6
70-74	22	19,4	19	19,1	41	19,3
75-79	13	11,6	14	14,1	27	12,8
80 and over	12	18,6	12	12,1	33	15,5
Total	113	53,3	99	46,7	212	100

Mutual consent unions were found to be predominant, accounting for 62 % of the cases (Figure 1). Dispensary Group III (sick) exhibited a predominant presence, accounting for 61,8 %, as indicated in Table 2.

Table 2. Distribution of older adults by dispensary group and sex

Dispensary groups	Female		Male		Total	
	No.	%	No.	%	No.	%
I	0	0	0	0	0	0
II	32	28,4	27	27,2	59	27,9
III	67	59,2	64	64,7	131	61,8
IV	14	12,4	8	8,1	22	10,3
Total	113	53,3	99	46,7	212	100

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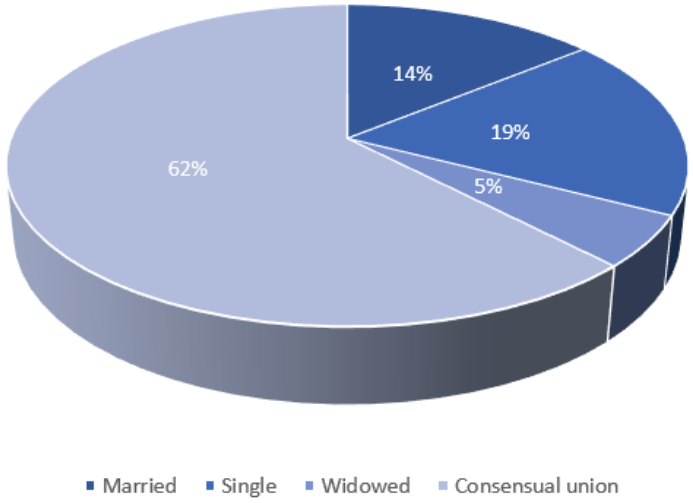

Figure 1. Distribution of older adults by marital status

With respect to basic activities of daily living (BADL), an independent state was the prevailing condition among both men (53,5 %) and women (52,1 %) (Table 3).

Table 3. Functional capacity by Basic Activities of Daily Living and sex

Functional Capacity	Female		Male		Total	
	No.	%	No.	%	No.	%
Total dependence	4	3,6	3	3,1	7	3,3
Severe dependence	4	3,6	3	3,1	7	3,3
Moderate dependence	7	6,1	5	5,0	12	5,6
Mild dependence	39	34,6	35	35,3	74	34,9
Independence	59	52,1	53	53,5	112	52,9
	113	53,3	99	46,7	212	100

Regarding instrumental activities of daily living (IADL), moderate dependence was the prevailing condition, with a rate of 42,9 %, regardless of gender.

Table 4. Functional capacity by Instrumental Activities of Daily Living and sex

Functional capacity	Female		Male		Total	
	No.	%	No.	%	No.	%
Total dependence	3	2,7	4	4,0	7	3,3
Severe dependence	23	20,3	17	17,1	40	18,9
Moderate dependence	49	43,3	42	42,5	91	42,9
Independence	38	33,7	36	36,4	74	34,9
Total	113	53,3	99	46,7	212	100

Source: Lawton and Brody Scale.

Major geriatric syndromes play a significant role in shaping the quality of life of the elderly (Table 5). Fragility and falls were the predominant syndromes, with a prevalence of 30,9 % in the female population and 18,1 % in the male population, with a higher incidence among females.

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Table 5. Distribution of older adults by Geriatric Syndromes and sex

Geriatric Syndromes	Female (n=113)		Male (n=99)		Total (n=212)	
	No.	%	No.	%	No.	%
Fragility	35	30,9	18	18,1	53	25,0
Immobility	10	8,8	3	3,0	13	6,1
Urinary incontinence	13	11,5	5	5,0	18	8,4
Falls	35	30,9	18	18,1	53	25,0
Cognitive impairment	8	7,0	5	5,0	13	6,1

Source: Geriatric Functional Rating Scale.

DISCUSSION

The increase in the proportion of individuals aged 60 and older is contingent upon reduced mortality rates and the global fertility rate. Over a specific timeframe, the rise in the population of those aged 60 and above results from the interplay of three factors: a decrease in pre-60 mortality (an increase in the likelihood of surviving to age 60), a decrease in post-60 mortality (an increase in life expectancy at age 60), and the birth rates during the period when they were born.

According to Lozano Keimolan and colleagues,[9] among the demographic characteristics of aging, one noteworthy aspect is the higher proportion of women compared to men among the elderly. Globally, women make up 55 % of individuals aged 60 or older. In Colombia, Paredes et al.[8] found an even higher percentage of women at 61,7 %. This trend is consistent with the population of the current research study.

Several Latin American authors[10,11,12] contend that older adults who are widowed, single, or live alone are more susceptible to risk factors associated with a decline in functional capacity. It is emphasized that living as a couple during old age bears crucial significance, as these partnerships establish connections that bolster mutual support and emotional well-being. It has been postulated that married individuals exhibit lower functional dependency due to, among other factors, the association of marriage with greater social resources and support, as well as healthier health-related behaviors. In our country, risk factors such as loneliness and isolation have been identified as prominent concerns among older adults. [13] We consider marital or consensual union status as a condition that promotes and contributes to improved life expectancy, owing to the protective effect provided by family bonds.

Elderly individuals exhibit a considerably higher prevalence (80 %) of Non-Communicable Chronic Diseases in comparison to younger individuals.[13] The challenges posed by an aging population are further exacerbated by the heightened prevalence of chronic conditions such as hypertension, diabetes, and hypercholesterolemia, as well as the existence of health conditions that primarily afflict older adults. Salinas-Rodriguez and colleagues. [11] reported that the most prevalent chronic conditions were hypertension (42,4 %), hypercholesterolemia (25,5 %), diabetes (25,1 %), and hypertriglyceridemia.

The findings from the research are consistent with the existing literature,[2,14] underscoring the paramount importance of primary healthcare, particularly where the employed dispensarization is vital for the identification of elderly individuals with multiple pathologies. This identification is crucial as it facilitates the selection of candidates for educational interventions directed at modifying lifestyle choices and behaviors, with the ultimate goal of augmenting their potential years of life.

Several decades ago, the World Health Organization [WHO] emphasized that functionality is the primary health indicator in older individuals.[15] This statement continues to gain significance and relevance with each passing day as we acknowledge the crucial importance of preserving and, often, restoring the participation of older individuals in meaningful activities that hold personal significance, irrespective of their specific health conditions.

Comprehensive Geriatric Assessment (CGA) is considered an innovative approach in geriatrics. It can be defined as a diagnostic, multidimensional process aimed at discerning the medical, psychosocial, and functional capabilities and challenges of a frail older individual. The ultimate objective is to formulate a comprehensive treatment plan and establish long-term follow-up procedures.[16]

The compromise of functional capacity often represents the sole manifestation of an underlying disease. Therefore, its assessment is integral to the evaluation of the quality of life in older adults. Deterioration in instrumental activities of daily living (IADL) serves as a predictive factor for a decline in basic activities of daily living (BADL), resulting in increased dependency. Dependent individuals are defined as those who, due to physical, mental, or cognitive limitations, necessitate substantial assistance and/or support to perform their daily life activities.[17]

Elderly individuals are more susceptible to experiencing various conditions that, while not necessarily classified as diseases, still represent significant health concerns, such as major geriatric syndromes.[15]

Several studies suggest that the increase in geriatric syndromes corresponds to an elevated degree of dependency. Elderly individuals with more than three geriatric conditions are found to have a risk seven times higher, while those with two geriatric syndromes exhibit a risk four times higher.[17,18] The final pathway is recognized as the well-known "cascade of disability and dependence", where the emergence of a functional or clinical impairment triggers another complication with the potential to exacerbate the initial condition or give rise to a new one, ultimately impacting the quality of life of the elderly individuals and limiting their independence and autonomy.

It is imperative to provide the elderly population with the means to exert better control over their health and enhance it. [17] All these efforts are geared towards achieving successful aging, defined as aging without disability, with the fewest possible diseases, or effectively managed ones, and, above all, striving to maintain their autonomy and quality of life, while always respecting their values and preferences. On the other hand, preventive activities for older adults should encompass not only the risk of disease but also the functional impairments that the disease may cause, along with common conditions such as frailty, falls, and iatrogenic complications that can compromise their health status.[15]

CONCLUSIONS

Functional capacity in the elderly was determined based on their degree of dependence in basic and instrumental activities of daily living.

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AUTHORSHIP CONTRIBUTION

Conceptualization: Daisy Mesa Trujillo, Claudia de la Caridad Zayas Argos, Ana Iris Verona Izquierdo, Israel García Mesa, Abanis López Zamora.

Research: Daisy Mesa Trujillo, Claudia de la Caridad Zayas Argos, Ana Iris Verona Izquierdo, Israel García Mesa, Abanis López Zamora.

Methodology: Daisy Mesa Trujillo, Claudia de la Caridad Zayas Argos, Ana Iris Verona Izquierdo, Israel García Mesa, Abanis López Zamora.

Original drafting and editing: Daisy Mesa Trujillo, Claudia de la Caridad Zayas Argos, Ana Iris Verona Izquierdo, Israel García Mesa, Abanis López Zamora.

Writing-revision and editing: Daisy Mesa Trujillo, Claudia de la Caridad Zayas Argos, Ana Iris Verona Izquierdo, Israel García Mesa, Abanis López Zamora.