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ORIGINAL

Clinical and epidemiological characterization of disability in the elderly population

Caracterización clínica y epidemiológicamente de la discapacidad en la población adulta mayor

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ABSTRACT

Introduction: the phenomenon of population aging has contributed to the increasing prevalence of disability in the elderly.
Objective: to characterize clinically and epidemiologically the disability in the elderly population of the medical office No. 14 belonging to the popular council Hermanos Saíz, San Juan y Martínez, in the period 2018-2020.
Method: an observational, descriptive, prospective study was conducted covering the population over 60 years of age. The sample consisted of 154 elderly adults with disabilities, selected by systematic and stratified sampling. Theoretical, empirical and statistical methods were used. Instruments such as the Katz Index, Lawton Index, Minimum Mental Status Examination, and the Survey of Disability Risk Factors (EFRD) were applied. Descriptive statistics were used for data analysis and processing. This research complied with the ethics fundamentals of the Declaration of Helsinki 2008.
Results: there is a predominance of female sex, age group between 60 and 69 years, and primary education level. The highest percentage is single, retired or pensioned. Acquired disability and, within them, physical, motor and mental disabilities are the most frequent. The most prevalent morbidity is arterial hypertension. Predominance of functioning level III. The most frequent risk factors are female sex, age, education and chronic non-communicable diseases.
Conclusions: knowledge of the epidemiological behavior of the elderly with disabilities will allow the development of actions with a promotional approach to improve quality of life and thus health.

Keywords: Elderly; Aging; Prevalence; Disability; Risk Factors.

RESUMEN

Introducción: el fenómeno de envejecimiento poblacional ha contribuido a que la prevalencia de discapacidad en los adultos mayores vaya en aumento.
Objetivo: caracterizar clínica y epidemiológicamente la discapacidad en la población adulta mayor del consultorio médico No. 14 perteneciente al consejo popular Hermanos Saíz, San Juan y Martínez, en el período 2018-2020.
Método: se realizó un estudio observacional, descriptivo, prospectivo que abarcó la población mayor de 60 años. La muestra estuvo conformada por 154 adultos mayores con discapacidad, seleccionadas por muestreo sistemático y estratificado. Se utilizaron métodos teóricos, empíricos y estadísticos. Se aplicaron instrumentos como: el Índice de Katz, el Índice de Lawton, Examen Mínimo del Estado Mental, y la Encuesta de Factores de Riesgo de Discapacidad (EFRD). Para el análisis y procesamiento de los datos se utilizó la

estadística descriptiva. Esta investigación cumplió los fundamentos de la ética de la Declaración de Helsinki 2008.
Resultados: existe un predominio del sexo femenino, del grupo de edad entre 60 y 69 años, y nivel educacional primario. El mayor porciento es soltero, jubilados o pensionados. La discapacidad adquirida y, dentro de ellas la fisicomotor y mental son las de mayor frecuencia. La morbilidad de mayor prevalencia es la Hipertensión Arterial. Predominó del nivel de funcionamiento III. Los factores de riesgo más frecuentes son el sexo femenino, la edad, la educación y enfermedades crónicas no transmisibles.
Conclusiones: el conocimiento del comportamiento epidemiológico del adulto mayor con discapacidad permitirá el desarrollo de acciones con enfoque promocional que mejoren calidad de vida y con ello la salud.

Palabras clave: Adulto Mayor; Envejecimiento; Prevalencia; Discapacidad; Factores de Riesgo.

INTRODUCTION

For centuries, older adults represented a demographic minority, being an object of interest concerning health matters. However, the present situation has changed due to their growing demographic presence. But due to a lack of inappropriate information, many individuals erroneously view aging as a disease. Undeniably, it stands as a factual reality that the distinctive characteristics of older adults are correlated with an elevated morbidity rate, as nearly all health conditions become more prevalent during the latter stages of life.[1]

Aging has been a topic of confrontation since humanity was aware of the impermanence of its existence and its inevitable culmination through time. The most straightforward approach to conceptualize it is as the biological transformations that living organisms experience as time advances, a phenomenon through which vitality and functional capabilities gradually diminish.[1,2]

These changes and transformations, stemming from the interplay of intrinsic (genetic) and extrinsic (environmental) factors, which encompass both protective and adversarial elements (risk factors) throughout an individual's lifetime, manifest as deteriorations in health that have a substantial impact on functional decline. Consequently, older adults often find themselves in situations of disability, including immobility, instability, and cognitive impairment.[1,3]

Although it is challenging to pinpoint the concept with exactitude, most experts concur that aging is a dynamic and multifactorial process. The existence of species unfolds in a sequence of stages within progressive life cycles. Organisms are born, develop, and ultimately reach the end of their life journey, a process influenced by genetic and environmental factors. In human beings, socio-economic and cultural determinants assume particular significance.[4]

According to the World Health Organization (WHO), the global process of population aging is advancing at a rapid pace. Projections indicate that between 2015 and 2020, the population of older adults aged 60 and over will increase from 900 million to 2 billion, marking a demographic growth in this age group of approximately 10 %.[3]

Population aging stands as the most profound epidemiological development witnessed in developed nations in recent decades. This demographic transition is characterized by the notable phenomenon referred to as “aging of aging”, in which individuals aged 65 and over comprise 15 % of the Western population, and those aged 80 and over constitute 3 %.[3,4]

This phenomenon is characterized by two fundamental aspects: firstly, it is universal, affecting all countries and continents, although its impact varies depending on its intensity, level of development, as well as social welfare and health policies in each country. Secondly, this marks the first occurrence of such a demographic shift, and in the ensuing decades, it will evolve into an increasingly pronounced trend.[4]

In the Western world, the progressive increase in life expectancy has raised concerns regarding the quality of life, giving rise to concepts related to it, both positive (active aging) and negative (disability or dependency). The European continent is one of the regions with the highest aging population globally. In Spain, the National Institute of Statistics (INE) reported that, in 2001, there were 6 950 706 individuals aged over 65, constituting 17 % of the population. According to INE's projections, by 2026, this figure is expected to increase to 10 876 681 people, representing 21,6 % of the population.[4]

Among countries with advanced demographic transitions are, for example, Japan, Italy, and Greece. In the Americas, countries such as Argentina, Barbados, Chile, the United States, and Uruguay fall into this category, among others. Cuba, too, belongs to this group, having transitioned from 11,3 % of individuals aged 60 and over in 1985 to 20,1 % in 2017, categorizing it under Group III of Aging (>15 %). Over a 32-year span, aging has increased by 8,8 percentage points. Projections estimate that by 2030, this figure will reach 30,3 %, and by 2050, it is expected to climb to 36,2 %.[3,4,5]

Compared to developed regions, the aging process in Latin America and the Caribbean has occurred over a considerably shorter timeframe. For instance, it took 115 years for the proportion of people aged 65 and over to double in France, whereas in Brazil and Colombia, this transformation has taken place in just two decades. Five countries have reached an advanced stage (Bahamas, Chile, Costa Rica, Trinidad and Tobago, and Uruguay), with fertility rates below replacement levels and aging indices ranging from 63 to 93 elderly individuals per 100 young people under 15 years of age. Barbados and Cuba have advanced even further, with fertility rates similar to the previous group but a population of older individuals exceeding those under 15 years of age, with indices of 128 and 111 individuals aged 60 years or older per 100 young people, respectively. In 2017, Barbados, Cuba, and Uruguay reported percentages of the population aged 60 and over at 20 %, with the proportion of those aged 75 and over ranging from 6 % to 7 %.[2]

Demographically, Colombia is undergoing a progressive and accelerated transformation in its population pyramid. It currently occupies a position among Latin American countries classified in an advanced stage of demographic transition and a moderate stage of aging. This trajectory leads to a consistent rise in the population aged 60 and over. Projections estimate that by 2050, there will be 14,1 million older adults, constituting 23 % of the total population in Colombia. Consequently, this will result in escalating social and economic burdens due to the heightened demand not only in the healthcare sector, where the care for chronic degenerative diseases associated with aging will increase, but also in terms of social support.[5,6]

Cuba stands as one of the early initiators of demographic transition among countries in Latin America and the Caribbean. This early transition can be attributed to a sharp decline in fertility, a gradual increase in life expectancy, and a persistent negative migration balance. The interplay of these factors, in conjunction with various other determinants, has resulted in the rapid aging of its population.[2,5]

According to estimates from the United Nations Population Division, Barbados and Cuba are projected to have the most elderly populations in Latin America and the Caribbean in the near future.[4]

Many of the morbidity and mortality situations affecting older adults (OA), which are linked to the physiological changes in the aging process and have a significant impact on the potential for movement and functionality, are correlated with lifestyle choices made earlier in life. If these choices had been modified promptly through health promotion and prevention measures, the prevalence of these situations could have been reduced. This, in turn, would have facilitated a more favorable life trajectory for older adults, preserving their capabilities for performance, action, and participation in their family and social environments, aligning with their expectations and realities.[4,5]

Several authors propose the criterion that the primary risk factors for frailty encompass a combination of factors stemming from biological aging. These factors include disruptions in balance and gait due to multiple disabilities, acute or chronic illnesses (whether diagnosed or undiagnosed), risk factors related to abuse (lifestyles, social factors, economic factors), and risk factors associated with disuse (inactivity, immobility, nutritional deficits).[1,4,5]

In addition to the aging population, it is important to note the increasing prevalence of chronic diseases among older adults. The WHO has reported a rising number of individuals with disabilities, primarily attributable to the aging of the population, as older individuals face a greater risk of disabilities. This upsurge is also linked to the global increase in chronic health conditions such as diabetes, cardiovascular diseases, and mental disorders. Chronic diseases are estimated to account for 66 % of all years lived with disability in low and middle-income countries. The presence of a higher number of older adults, with a significant proportion of them experiencing disabilities, leads to elevated levels of dependency.[7]

The increased morbidity observed in aging is intricately linked to the future functional status of the elderly. This stage is characterized by a decline in physiological reserve, resulting in a notable state of fragility in the individual. Fragility encompasses mental and behavioral morbidity, and neurologically, it includes conditions such as stroke. However, this condition is not confined solely to the cardiovascular system, as it is often described in OA, but it also extends to the visual and musculoskeletal systems. Both fragility and chronic diseases leading to disability can progress independently, concurrently, or combine their effects, which significantly impacts the pathogenesis, course, and prognosis of the condition.[7,8]

It is essential to highlight that a higher prevalence of chronic diseases elevates the likelihood of severe disability when compared to individuals with a single chronic disease or those without any chronic conditions. Moreover, aside from physical and health-related factors, early-life conditions and socioeconomic status also exert an influence on functional status. Consequently, in population-based assessments of disability prevalence among older adults, disparities between high and low-income countries are discernible. This underscores the heterogeneous nature of disability in aging, which is contingent on various determinants.

In the realm of health, alterations extend beyond the physical component associated with functionality and mobility during this stage. Mental aspects are also influenced, as depressive symptoms, cognitive impairment, and dementia may manifest.[6,7,8]

Cuba has emerged as the economy with the most aged population in the region since 2010. Transitioning from

a triangular population pyramid with a broad base in 1981, the age and sex structure of the Cuban population evolved into a more rectangular pyramid, characterized by a bulge in the middle and a widening at the top by 2019. Notably, the Cuban population has experienced a simultaneous decrease in the percentage of individuals under 15 years old, coupled with an increase in the relative proportion of the population aged 60 and over. By the close of 2019, those aged 60 and over constituted 20,8 % of the total population.[2,8,11]

Aging exhibits a relatively uniform distribution at the provincial level, with rates ranging from 18,4 % in Artemisa province to 24 % in Villa Clara province. Pinar del Río has a rate of 21,6 % and has limited publications related to the topic.[2,5,11]

San Juan y Martínez is one of the municipalities with the most aged population in the province and lacks recent publications related to the subject. Consequently, the following question arises: "How does disability manifest in the elderly population of Medical Office No. 14?" In response to this query, a decision has been made to undertake research with the aim of delineating the clinical-epidemiological patterns of disability in the elderly population of Medical Office No. 14, situated in the Hermanos Saíz Popular Council. Aging is undeniably a remarkable accomplishment, but it also entails substantial challenges, influenced by the diverse characteristics of older individuals who experience an extended life cycle, and by the ways in which organized social and institutional responses are provided for their care.

OBJECTIVE: To assess disability among the elderly population attending Medical Office No. 14, affiliated with the Hermanos Saíz Popular Council, during the period 2018-2020.

METHODS

An observational, descriptive, and longitudinal study was conducted to characterize the clinical-epidemiological patterns of disability among the elderly population from Medical Office No. 14, affiliated with the Hermanos Saíz Popular Council, and part of the Dr. Modesto Gómez Rubio Polyclinic in the municipality of San Juan y Martínez, during the period 2018-2020.

The study's universe included 256 older adults from the 60+ population registered in the municipal statistics and in the family health records at Medical Office No. 14. The sample consisted of 154 older adults with disabilities who were selected through systematic and stratified sampling. They agreed to participate in the research after being presented with the study's objectives and meeting the inclusion criteria.

Inclusion criteria:

- Individuals who are 60 years or older, have a confirmed disability, and consented to participate in the research.
- Individuals who are residing in the local area (rural zone) at the time of the study.

Exclusion criteria:

- Individuals who are 60 years or older, have a confirmed disability, but did not consent to participate in the research.
- Older adults who are permanently institutionalized, hospitalized, relocate from the local area, or pass away during the study.

Theoretical, historical, and logical methods of scientific research were employed, with a primary reliance on the processes of analysis, synthesis, induction, and deduction. An exhaustive and up-to-date search of epidemiological studies was conducted to acquire an international and national perspective on disability in older adults, along with studies related to health education and primary prevention.

Among the empirical methods used were the documentary analysis of family medical histories and personal health records. These, in conjunction with regular health examinations and the application of various instruments, enabled a comprehensive evaluation of older adults. These instruments included the Katz Index (assessing independence in Activities of Daily Living, ADL), the Lawton Instrumental Activities of Daily Living (IADL) Scale, the Mini-Mental State Examination (MMSE) for evaluating mental health, and the Survey of Disability Risk Factors (SDRF) for assessing risk factors. For more details, please refer to appendices 2, 3, 4, and 5.

Physical disability was assessed based on reported limitations in the performance of basic and instrumental activities of daily living. The assessment relied on the Katz and Lawton indices. The Katz scale (for basic activities) was employed to evaluate limitations in bathing, toileting, transferring from the bed or chair without assistance, dressing, eating, and sphincter control. On the other hand, the Lawton scale, intended for instrumental activities, was utilized to analyze the need for assistance in food preparation, medication management, shopping, and money management. Disability was considered present in cases where a limitation was reported in the execution of at least one of these activities.

To accomplish the stated objectives, variables were operationalized to measure and identify risk factors associated with disability in older adults. These variables included age group (60-69 years, 70-79 years, 80 years

and older); marital status (single, married/stable union, widowed, separated/divorced); level of education (primary, middle or higher education); origin of disability (congenital or acquired), type of disability; cognitive performance; and functional independence. In the assessment of health-related variables, clinical records were used to collect information on conditions such as diabetes mellitus, systemic arterial hypertension, chronic obstructive pulmonary disease (COPD), cancer, ischemic heart disease, osteoarthritis, cerebrovascular disease, cognitive impairment (dementia), Parkinson's disease, and a history of fractures.

To evaluate the level of dependence in activities of daily living (ADLs), the following criteria were considered:

- Independent: when an individual can perform all six activities of daily living (ADLs) independently.
- Dependent: when an individual requires assistance with at least one of the activities.

To evaluate the level of dependence in instrumental activities of daily living (IADLs), the following criteria were considered:

- Independent: when the elderly individual can perform these activities by themselves, only needing guidance but no assistance from others.
- Dependent: when they require assistance from others to perform these activities.

The presence of three functional levels was determined by the Katz and Lawton indices was considered:

- Level I: when the patient is dependent for ADLs.
- Level II: when the patient is independent for ADLs but dependent for one or more IADLs.
- Level III: when the patient is independent for both ADLs and IADLs.

For data analysis and processing, summary measures were applied to both qualitative and quantitative variables. The resulting information was presented in tables and graphs. The acquired data were tabulated, and their analysis included frequency measurements, percentages, as well as the assessment of associations between variables employing chi-square tests ($p<0,05$) and Odds Ratios when necessary. Data processing was conducted using the SPSS software package, version 21.

From an ethical perspective, this research adhered to the principles of ethics as delineated in the 2008 Helsinki Declaration. Its primary objective has been scientific, without adverse effects on the environment or foreseeable risks.

RESULTS

Table 1 presents the sociodemographic characteristics of the studied population, indicating a predominance of females (56,5 %) over males (43,5 %). The majority of older adults fall within the 60-69 age range, accounting for 53,9 %. Approximately 52,7 % of the population have primary-level education, followed by 47,7 % with middle-level education. Regarding marital status, there is a prevalence of single, widowed, and separated/divorced older adults in decreasing order, with percentages of 50,6 %, 20,8 %, and 14,9 %, respectively. Around 40 % are retired and/or pensioned, while 33,8 % are still employed, and 26,6 % are engaged in domestic tasks. Only 29,9 % have a caregiver, and 19,5 % are financially dependent.

In Figure 1, disabilities are categorized based on their origin, revealing that 82 % are attributed to acquired disabilities, while 18 % are linked to congenital disabilities.

Table 1. Sociodemographic characteristics of the population aged 60 and over with disabilities. Clinical and epidemiological characterization of disability in the older adult population. San Juan y Martínez. 2018-2020.

Sociodemographic Variables	Female		Male		Total	
	No	%	No	%	No	%
Age in years						
60-69 years	47	30,5	36	23,4	83	53,9
70-79 years	27	17,5	20	13,0	47	30,5
≥ 80 years	13	8,5	11	7,1	24	15,6
Total	87	56,5	67	43,5	154	100
Level of education						
Primary level	47	30,5	34	22,1	81	52,6
Middle level	29	18,8	22	14,3	51	47,7
Higher level	11	7,1	11	7,1	22	14,2

Marital status						
Single	47	30,5	31	20,1	78	50,6
Married/Stable union	14	9,1	7	4,5	21	13,6
Widowed	13	8,4	19	12,3	32	20,8
Separated/divorced	13	8,4	10	6,5	23	14,9
Employment status						
Working	16	6,7	36	23,4	52	33,8
Retired/Pensioned	35	22,7	26	16,9	61	39,6
Homemaker	36	23,4	5	3,2	41	26,6
Have a caregiver						
Yes	26	16,9	20	13,0	46	29,9
No	61	39,6	47	30,5	108	70,1
Economic dependency						
Yes	16	10,4	14	9,1	30	19,5
No	71	46,1	53	34,4	124	80,5

Source: Personal and familiar health histories.

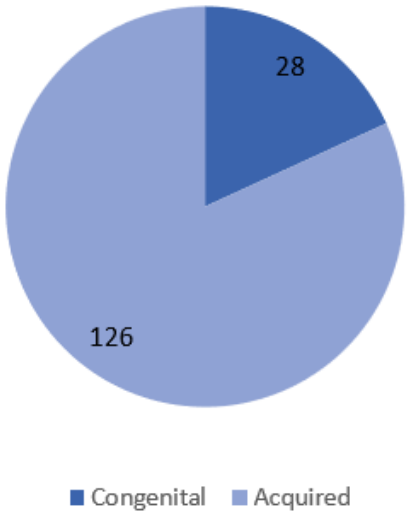

Figure 1. Distribution of older adults with disabilities according to their origin, Medical Office #14, Hermanos Saíz Popular Council, 2018-2020.

Acquired disabilities, closely linked to the natural process of aging, are the most prevalent. The contemporary challenge presented by an aging population is the implementation of programs that offer effective assistance to the elderly.

Table 2. Distribution of older adults according to type of disability

Type of disability	No.	%
Physical	48	31,2
Mental	28	18,2
Auditory	21	13,6
Visual	16	10,4
Intellectual	15	9,7
Visceral	4	2,6
Mixed	22	14,3
Total	154	100

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Table 2 presents the findings concerning the types of disability in older adults from Medical Office No. 14, indicating a predominance of physical disabilities, followed by mental disabilities at 31,2 % and 18,2 %, respectively. Notably, 14,3 % of individuals exhibited mixed disabilities, signifying that as age advances, the coexistence of more than one disability becomes more common, likely due to comorbidities and risk factors in the aging process.

Table 3. Health status of the studied population according to personal pathological antecedents. Clinical Office #14, San Juan y Martínez, 2018-2020

Personal pathological antecedents. (n=154)	No.	%
Hypertension	58	**37,7**
Cancer	3	1,9
Diabetes Mellitus	38	**24,7**
Chronic Obstructive Pulmonary Disease	8	5,2
Osteoarthritis	12	7,8
Hip fracture sequelae	2	1,3
Ischemic heart disease	2	1,3
Cerebrovascular disease	14	9,1
Dementia	18	**1,7**
Parkinson's disease	1	0,7

Table 3 provides a description of the personal pathological antecedents within the studied population. Among the most prevalent morbidities in the sample, it was observed that 37,7 % of older adults have Hypertension (HTN), followed by Diabetes Mellitus (DM) at 24,7 %. In descending order, older adults with dementia accounted for 11,7 %, 9,1 % had a history of cerebrovascular disease, 7,8 % had osteoarthritis, and 5,2 % had Chronic Obstructive Pulmonary Disease (COPD). Only 1,9 % of the patients had been diagnosed with cancer. At least 1,3 % reported ischemic heart disease and hip fracture sequelae, with a lower frequency of Parkinson's disease (0,7 %).

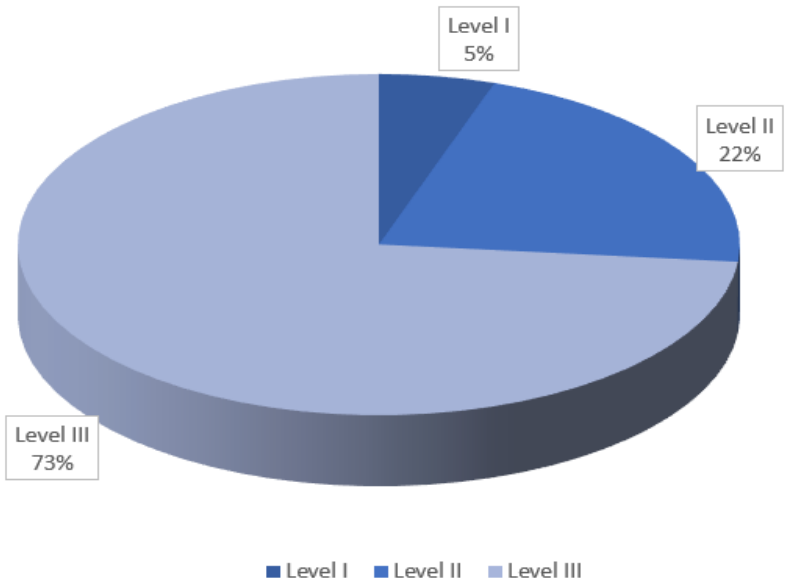

Figure 2. Functional assessment according to basic and instrumental activities of daily living

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Figure 2 illustrates the functional assessment based on basic and instrumental activities of daily living. It shows that 73 % of the older adult population with disabilities falls into level III, indicating their independence in both basic and instrumental activities of daily living. This is followed by 22 % at level II (dependent for some instrumental activities), and 5 % are dependent for both basic and instrumental activities of daily living.

Table 4 outlines the risk of functional dependence concerning specific sociodemographic variables and health status, as derived from their medical history.

Table 4. Risk of functional dependence according to sociodemographic variables and health status in older adults with disabilities, Medical Office #14, Hermanos Saíz Popular Council, 2018-2020.

Variables	Functional		Non-Functional		Total	OR	X^2(p)
	No.	%	No.	%			
Sex							
Female	70	80,4	17	19,5	87	2,29	5,13 (0,02)
Male	43	64,1	24	35,8	67		
Age in years							
60-69	69	83,1	14	16,9	83	1,69	9,90 (0,007)
70-79	31	66	16	34	47	2,54	
≥ 80 years	13	54	11	46	24	4,17	
Level of education							
Primary level	48	42,48	33	80,49	81	6,87	17,4 (0,0001)
Middle level	45	39,82	6	14,63	51	5,16	
High level	20	17,7	2	4,88	22	1,33	
Health status							
Hypertension	49	43,36	9	21,95	58	4,39	5,87 (0,01)
Diabetes Mellitus	30	26,55	8	19,51	38	1,01	0,80 (0,37)
Osteoarthritis	12	10,62	0	0	12	0	4,72 (0,03)
Cerebrovascular disease	7	6,19	7	17,07	14	3,02	4,30 (0,03)
Dementia	9	7,96	9	21,95	18	3,25	5,70 (0,01)
COPD	7	6,19	1	2,44	8	2,64	0,86 (0,35)
Hip fracture sequelae	0	0	2	4,88	2	0	5,58 (0,01)
Ischemic heart disease	1	0,88	1	2,44	2	2,8	0,56 (0,45)
Cancer	0	0	3	7,32	3	0	8,43 (0,003)
Parkinson's disease	0	0	1	2,44	1	0	2,77 (0,09)

Source: documentary analysis and administered questionnaires. (p<0,05) OR>1

In relation to the connection between sociodemographic factors and the state of functional dependence, a notable association was identified between disability and the female sex (OR=2,29, p=0,02). This suggests that women may be more susceptible to functional dependence due to their longer life expectancy compared to males. The variable “age” displayed a noteworthy association, with older age being linked to an increased risk of functional dependence. In the group aged 80 years and older, the OR was 4,17 with p=0,007, establishing it as a significant risk factor for a decline in functional capacity. Additionally, the primary education level (OR=6,87, p=0,0001) exhibited a level of statistical significance and association with disability and functional dependence as assessed by ADLs and IADLs, indicating that lower levels of education are correlated with a higher risk of disability.

DISCUSSION

In their study on aging, García Quiñones and Alfonso León [2] highlight evident sex differences in the life expectancy of older Cubans, with higher values observed for the female population. Life expectancy figures for 60-year-olds are 21,3 years for men and 23,6 years for women. At 75 years of age, life expectancies are 10,9 and 12,3 years, respectively.

In their study conducted in San Juan de Pasto, Colombia, Paredes Arturo et al.[6] discovered that 61,4 % of the population comprises female older adults, with the majority falling within the age range of 65 to 74 years (46 %). Slightly more than half of them had completed primary education (57 %). These findings align with the

results obtained in our research.

Furthermore, in Latin America, the current population aged 60 or older exceeds 32 million people, with 55 % of them being women. In Sonora, the population aged 60 and over constitutes 6 % of the total population, with women representing 51 %, and 53.3 % having completed primary education.[1]

Studies conducted in Cuba indicate that lower levels of education are correlated with an increased risk of disability and mortality as individuals age. A sufficient education level plays a crucial role in enhancing and maintaining the quality of life by empowering individuals to better manage their lives and environment and adopt healthy lifestyle practices.[2]

The findings of this research contrast with a study conducted in Cienfuegos,[4] where a higher prevalence of males was observed. Similarly, a study on longevity in Pinar del Río[5] revealed a predominance of males, accounting for 60.4 %, over females, who constituted 56,1 % of the total sample. Additionally, research on functionality and the degree of dependence in Colombia[1] also showed a preponderance of males over females.

In contrast to the current study, Paredes Arturo and colleagues[6] discovered that 63 % of the participants were economically dependent. Only 17 % had someone providing care for them, and these factors, in conjunction with the preponderance of males, were variables associated with a dependent level of functionality.

Luna-Orozco et al.[10] describe in their research that 74,1 % of their participants were either married or in a common-law union; 48,68 % were women, and 64,7 % reported having a regular economic situation. These findings exhibit some disparities compared to our research in terms of marital status and sex prevalence. However, they align in terms of education, with both studies reporting that over 50 % of the male and female population had completed primary education, and in terms of economic status, where 73,4 % of the studied elderly individuals were either employed or retired/pensioned. This underscores the role of low educational levels as a risk factor for disability in the elderly.

Similar results to this research were obtained in a study conducted in Havana in 2019, focusing on disability in older adults as a consequence of living conditions. In both study groups, a preponderance of females was noted, constituting 51,16 % in the group with unfavorable living conditions and 67,74 % in the group with favorable living conditions. Additionally, it was observed that in older adults with unfavorable living conditions, there was a predominance of primary education (44,19 %). Conversely, among disabled older adults with favorable living conditions, a preponderance of middle-level education (35.48 %) was observed. [11]

An analysis of the data by sex reveals that the highest percentages of individuals engaged in domestic work are women who bear an unpaid and often underrecognized workload. These responsibilities encompass the care of children, the sick, or disabled individual, who are at times older adults themselves. Similar findings were identified in the research.[2]

Disability is a generic term that includes impairments in functions and structures, limitations in activity, and/or restrictions in participation within society. It signifies the adverse aspects of the interaction between an individual (with a health condition) and their contextual factors (environmental and personal factor).[11,12]

Aging also brings a substantial burden of chronic diseases, leading to an augmented demand for long-term care among individuals due to the loss of mobility, increased frailty, and the consequences of physical or mental illnesses. All these factors contribute to higher rates of disability.[11,12]

A study conducted in Honduras revealed that 58,9 % of older adults were women, and the prevalence of disability was 52,2 %, primarily acquired in 91,6 % of cases. This disability was associated with factors such as sex (female), age over 70, low educational level, chronic illnesses, trauma, accidents, or violence, all displaying statistical significance at $p<0,01$. These findings correspond with the results of our study regarding sex, educational level, and the origin of disability.[13]

The authors contend that the main risk factors for frailty encompass a constellation of issues arising from biological aging, including disturbances in balance and gait due to multiple disabilities, acute or chronic illnesses (whether known or unknown), risk factors related to abuse (lifestyles, social factors, economic factors), and risk factors associated with disuse (inactivity, immobility, nutritional deficits).[6,14]

The WHO has estimated that 15 % of the global population experiences some level of disability, with the risk of disability increasing as individuals age. This report outlines a worldwide prevalence of disability in older adults at 38,1 %, with notable variations between high-income countries (29,5 %) and low-income countries (43,4 %).[13] Aging is a natural life progression, not a disease, and due to the demographic shift toward an aging population, one of the principal challenges in the near future will be addressing the heightened prevalence of disability.[15]

The WHO points out that certain chronic diseases, including cardiovascular diseases, diabetes mellitus, and cancer, account for 66,5 % of the overall years lived with disability in middle and low-income countries.[13,16,17]

Our research aligns with the overall findings for Latin America, highlighting the elevated occurrence of physical disabilities. Studies conducted in Honduras also revealed that physical disabilities exhibited the highest prevalence among both sexes, at 40,9 % for females and 30,9 % for males.[13,17]

It is evident that the aging population results in the accumulation of chronic diseases among individuals aged

60 and above and primary prevention efforts among those under 60 can enhance the health of future cohorts. However, a substantial portion of the potential to alleviate the disease burden lies in primary prevention, early detection, and rehabilitation for older individuals, particularly in diseases where disability, rather than mortality, constitutes the primary burden. Such diseases include dementia, chronic obstructive pulmonary disease (COPD), cerebrovascular diseases, vision and hearing impairments, and musculoskeletal disorders, among others.[18]

Concerning disability, as per the latest census, around 13,5 % of the Cuban population aged 60 or older disclosed experiencing some form of limitation or disability affecting speech, vision, hearing, mobility, mental well-being, intelligence, or the management of bodily waste. For individuals aged over 75, the rate of older adults reporting disabilities was 21,1 %.[2]

The concept of disability has evolved over the years, and it is now understood as the outcome of the interaction between environmental conditions and physical, sensory, or neurocognitive impairments. In the case of older adults, this interaction often results in functional dependence on others.[1,2] Disability is additionally linked to other secondary conditions that influence health status and quality of life. Consequently, monitoring this population is imperative, as this factor amplifies their vulnerability.[19]

Luna-Orozco et al.[10] reported that, in relation to cardiometabolic diseases considered in their study, 33,2 % had a history of hypertension, 13,5 % reported being diabetic, 24,2 % were classified as obese based on their BMI, 2,5 % had experienced a myocardial infarction, and 2 % had a history of cerebrovascular disease. Additionally, 5 % had respiratory morbidities such as COPD or asthma, 1,6 % had cancer, 16,6 % had arthritis, 11,4 % had a history of fractures, and 51,8 % had cognitive deficits. These findings are consistent with our study concerning the prevalence of common conditions like hypertension, diabetes, and dementia. However, our research observed a higher frequency of cerebrovascular disease and an equivalent frequency for respiratory morbidities, with lower frequencies for fractures and osteoarthritis.

In a study conducted at the Pedro Borras Polyclinic in Pinar del Río, a clinical-epidemiological characterization of the aging population analyzed the most prevalent diseases among the elderly in the research. Hypertension was the most significant, affecting 64,3 % of the participants. These findings are consistent with the results of our research. Hypertension is the most prevalent health concern among the elderly in these populations and a leading cause of medical consultations. It represents both a disease itself and a significant risk factor for other conditions.[20]

Changes in lifestyle in developing countries, characterized by diets with a higher fat content, increased consumption of animal products, lower fiber intake, and physical inactivity, have contributed to the rising prevalence of chronic diseases such as type 2 diabetes and hypertension, among others. With advancing age, the prevalence of these diseases increases, consequently elevating the prevalence of disability. Disability itself raises the risk of mortality, irrespective of age, sex, or comorbidities. In many cases, the consequences of these conditions often result in higher costs than the acute phase of the illness.[21,22]

The gradual decline in physical and mental health conditions that accompany individual aging, coupled with the accumulation of chronic diseases, leads, in the absence of specific interventions, to the progressive loss of autonomy and functional limitations. These factors define the health status of older adults.[18,22,23]

Functioning, defined as an individual's capacity to perform activities of daily living as specified in the International Classification of Functioning, Disability, and Health (ICF), gradually declines, with this decline being more pronounced in individuals aged 65 and older.[18,22,24] In Figure 2, a functional assessment based on basic and instrumental activities of daily living is detailed.

For primary healthcare providers, it functions as a guide that facilitates diagnosis, assists in care planning, establishes rehabilitation goals, and monitors clinical assessments for dependent elderly individuals.

In the context related to the functional assessment of basic and instrumental activities of daily living, the study reveals a higher proportion of older adults with functional independence. Similar findings were observed in a study conducted in Colombia [6], where functional capacity showed greater limitations in instrumental activities of daily living among older adults in Barranquilla, with only 4,5 % exhibiting dependence.

In a research study conducted in São Paulo, Brazil, significant data on the level of dependence among the elderly were obtained. The study found that 80,7 % of the participants did not have limitations that hindered their self-care. However, a decline in functional performance was observed in the older age group. The research also indicated that 26,5 % of the elderly had difficulties in performing instrumental activities of daily living, which necessitated assistance from others who acted as intermediaries between them and their social environment. These findings align with the results of the present study.[6]

The results of the current study highlight that functional capacity is affected by several factors as part of the aging process, contributing to a gradual decline in independence among older adults. This can impact their quality of life and the context in which they interact.

The advantages in female survival compared to men do not necessarily correspond to better health. Empirical evidence suggests that women tend to experience higher morbidity than men over the course of their lives. This

morbidity manifests as a greater incidence of acute conditions, a higher prevalence of chronic degenerative diseases, and elevated levels of disability.[2,22]

Early childhood education combined with opportunities for learning helps develop skills to adapt and remain independent as they age.[2,23]

In relation to the health status, a significant association was observed between specific comorbidities and the risk of functional dependence. Notably, Systemic Arterial Hypertension exhibited the highest significance (OR=5,87, p=0,01), followed by cognitive impairment attributed to Dementia (OR=5.70, p=0.01), and Cerebrovascular Disease (OR=3,02, p=0,03). As the population continues to age and the prevalence of chronic diseases rises, these conditions tend to result in complications and sequelae that impede independence and autonomy among individuals.[25]

Other conditions displayed statistical significance including osteoarthritis (p=0,02), cancer (p=0,003), and post-fracture sequelae (p=0,01). These findings are in line with the results of another study conducted in Colombia, where elderly individuals experiencing widespread pain exhibited a threefold higher risk of experiencing initial mobility challenges compared to those without pain. The presence of generalized pain was identified as a predictive factor for diminished mobility and ensuing disability.

It is crucial to highlight that a higher prevalence of chronic diseases is associated with an increased risk of severe disability. In some research, cardiovascular diseases were more prevalent, while in other, arthritis was more common, followed by conditions like diabetes, heart attacks, strokes, hip fractures, and cancer.[9,11,25]

In the study conducted by Luna-Orozco, a substantial association was identified between the presence of disability and the presence of "multimorbidity" (p<0,001), hypertension (p<0,001), arthritis (p<0,001), cerebrovascular disease (p<0,001), cognitive impairment (p<0,001), COPD or asthma (p=0,017), and a history of fractures (p=0,013). The current study yielded similar results concerning comorbidities such as hypertension, cognitive impairment, cerebrovascular disease, and a history of fractures, although distinctions were observed regarding COPD.[10]

In the study conducted by Ortiz García et al.[20], while analyzing the most prevalent conditions among the elderly participants, hypertension (64,3 %), cerebrovascular diseases (35,6 %), and psychiatric disorders (24,6 %) were prominently observed. These outcomes align with the results obtained in the present study.

The results from the study[6] on older adults in San Juan de Pasto, Colombia, demonstrated an association between a history of cerebrovascular disease (OR=3,41; 95%CI 1,21-9,61), arthritis (OR=2,24; 95%CI=1,27-3,98), depressive symptoms (OR=3,07; 95%CI=1,54-6,123), and symptoms of cognitive impairment (OR=2,04; 95%CI=1,15-3,64) with a higher risk of functional dependence. Similar results are observed in the current study, particularly regarding cerebrovascular disease and cognitive impairment.

Heart disease, malignant tumors, and cerebrovascular diseases constituted a high percentage of all deaths in Cuba in 2019. Furthermore, cognitive impairment affected 5.3 % of the Cuban elderly population. Approximately 160,000 older adults were estimated to have dementia, with Alzheimer's disease accounting for 70 % of these cases. [2]

These diseases are often triggered by unhealthy lifestyle patterns, such as tobacco and alcohol consumption, insufficient physical activity, and inadequate nutrition. [2]

In conclusion, the study exhibits a higher proportion of females compared to males. The most prominent age group falls within the 60-69 years category, and the majority have completed primary education Single, retired, or pensioned individuals constitute the largest portion of the disabled elderly population, and in descending order, followed by those who are employed or engaged in household tasks.

Acquired disabilities are the most common, with motor and mental disabilities being the prevailing types among the studied population. The most prevalent comorbidities observed include Hypertension, Diabetes Mellitus, Dementia, and Cerebrovascular Disease. Among the functional levels in the studied population, the majority fall into level III (independent), followed by a smaller proportion at levels II and I.

The primary factors associated with disability in the elderly were female sex, age, education, and, concerning health status, conditions such as Hypertension, cognitive impairment due to dementia, and Cerebrovascular Disease.

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CONFLICT OF INTEREST

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