



Update on population aging, dementia and depression in the elderly
Actualización de envejecimiento poblacional, demencia y depresión en el anciano

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ABSTRACT

Introduction: population aging refers to the increase in the proportion of people over 65 years of age in relation to the total population of a country or region.

Objective: update information on population aging with emphasis on dementia and depression in the elderly.

Methods: a review of published articles on population aging, dementia and depression in the elderly was carried out; A total of 22 articles were included.

Development: major geriatric syndromes are a set of common medical conditions that affect older adults. They constitute a set of symptoms and signs that can have a significant impact on the quality of life of older adults. They include frailty syndrome, falls syndrome, immobility syndrome, and delirium syndrome. They are characterized by the presence of multiple risk factors, such as advanced age, the presence of chronic diseases, polypharmacy, and a decrease in the body's functional reserve.

Conclusions: today in Cuba there is a predominance of the population that is going towards senescence accompanied by a high rate of senile dementia. These patients mostly present problems in their normal development in society and in the family. Therefore, the care and maintenance of the quality of life of people who suffer from it constitutes one of the most important health objectives and social challenges today.

RESUMEN

Introducción: el envejecimiento poblacional se refiere al aumento de la proporción de personas mayores de 65 años en relación con la población total de un país o región.

Objetivo: actualizar información sobre el envejecimiento poblacional con énfasis en la demencia y la depresión en el anciano.

Métodos: se realizó una revisión de artículos publicados acerca del envejecimiento poblacional, la demencia y la depresión en el anciano; se incluyeron un total de 22 artículos.

Desarrollo: los grandes síndromes geriátricos son un conjunto de afecciones médicas comunes que afectan a los adultos mayores. Constituyen un conjunto de síntomas y signos que pueden tener un impacto significativo en la calidad de vida de los adultos mayores. Se incluyen el síndrome de fragilidad, el síndrome de caídas, el síndrome de inmovilidad y el síndrome de delirium. Se caracterizan por la presencia de múltiples factores de riesgo, como la edad avanzada, la presencia de enfermedades crónicas, la polifarmacia y la disminución de la reserva funcional del cuerpo

Conclusiones: hoy día en Cuba existe predominio de la población que va hacia la senescencia acompañado de un alto índice de demencia senil. Estos pacientes en su mayoría presentan afección de su normal desenvolvimiento en la sociedad y en la familia. Por tanto, el cuidado y mantenimiento de la calidad de vida de personas que la sufren, constituye uno de los objetivos sanitarios y retos sociales más importantes en la actualidad.

INTRODUCTION:

Population aging refers to the increase in the proportion of people over 65 years of age in relation to the total population of a country or region. This phenomenon is due to a combination of factors, such as the decrease in the birth rate, the increase in life expectancy and migration.^{1,2}

It is estimated that between 2015 and 2050, the percentage of the planet's inhabitants over 60 years of age will almost double, going from 12% to 22%. The number of people aged 80 and over is expected to triple between 2020 and 2050, reaching 426 million. In 2030, one in six people in the world will be 60 years old or older. By that time, the population group aged 60 and older will have risen from 1 billion in 2020 to 1.4 billion. By 2050, the global population of people aged 60 and over will have doubled to 2.1 billion. The subregions of Central America and the Caribbean have countries that are experiencing rapid population aging.²

The demographic aging process began between 1950 and 1960 in countries such as Cuba, Puerto Rico and Jamaica. A second group of countries started it after the 1990s and recently, in the 2010s and 2020s, a third group reached the threshold of 7% of older inhabitants in their population. It is

worth highlighting the accelerated process that has been registered in Costa Rica and Cuba, with a slower trajectory at the beginning and which reached 28% of the elderly population in the 2020s. ²

In 2019, 20.8% of the population in Cuba was or had passed the sixth decade of life. At the end of 2022, this indicator stood at 22.3%. Currently the number of inhabitants aged 60 and over in Cuba amounts to 2,478,087. According to the latest projection carried out by the ONEI, it is estimated that by the year 2050, the population of people will reach a degree of aging of 35.9%, which would represent a number of 3,343,520 older people. ^{3,4}

Population aging has important consequences for public health, including an increased risk of chronic diseases, disability, dependency and mental health problems. This can have significant implications for healthcare systems and the broader economy. ⁵

The elderly suffers from chronic, physical and mental illnesses, which increase dependency. The most prevalent neuro-psychiatric diseases in older adults (which varies depending on the location and the tool used for diagnosis) are dementia and depression. The figures are lower when diagnostic instruments are used, such as those from ICD 10 or DSM-V compared to screening instruments, such as the Yesavage scale or the Euro-dep. A study in a population of older adults (n=17,000) using the ICD-10 criteria reported prevalence of depression of 2.3% in Puerto Rico, 13.8% in the Dominican Republic, 4.9% in Cuba and 0.5% in Nigeria, in Ecuador the prevalence of depression is 39% according to a survey carried out. It is estimated that the incidence of new cases of this entity per year is approximately 15%. Own factors such as the diseases they suffer from, the environment in which they live, social situation (loneliness) and even some demographic factors such as work, marital status, among others, influence the annual increase in these entities. ^{4,5}

An updated review of the topic is necessary as these entities have been little studied in recent years. Therefore, the objective of this work is to update information on population aging, dementia and depression in the elderly.

METHOD:

A review was carried out of articles published in the databases PubMed, SciELO, Scopus, and Google,

about population aging, dementia and depression in the elderly. The descriptors were used: “Elderly”, “Dementia” and “Aging” in English and Spanish, and they were combined using the Boolean operators AND and OR.

The information search focused on articles published in the last ten years. The selection criteria were: systematic reviews, meta-analysis, clinical trials, clinical practice guidelines and bibliographic reviews. Any article that did not show the full text was excluded.

A total of 45 articles selected by abstract review were reviewed. Of the most relevant publications with the object of study, a reading of the full text was carried out and 30 articles were included. Of these, 73.3% were updated in the last 5 years.

DEVELOPMENT

Geriatric syndromes and comprehensive geriatric assessment

In a review article it is stated that people age as they have lived and reach old age marked by an important baggage of life events. Aging is nothing more than changing, accumulating knowledge and experiences that require unfolding processes of adaptation and development at a personal and social level. Active aging is considered as a dynamic process and not as a state. We agree with what was mentioned above and agree with the criteria of other authors.^{5,6}

Major geriatric syndromes are a set of common medical conditions that affect older adults. These syndromes are not considered diseases in themselves, but are a set of symptoms and signs that occur together and can have a significant impact on the quality of life of older adults. They start from the four major syndromes: instability, incontinence, immobility and intellectual deficit. These include, but are not limited to, frailty syndrome, falls syndrome, immobility syndrome, and delirium syndrome. They are characterized by the presence of multiple risk factors, such as advanced age, the presence of chronic diseases, polypharmacy, and a decrease in the body's functional reserve.^{7,8}

It is considered important to highlight that these syndromes can overlap and coexist in the same patient, and that their treatment usually involves a multidisciplinary approach that addresses both the medical and social and psychological aspects of the patient. Early recognition and appropriate intervention in these syndromes can help prevent complications and improve the quality of life of

older adults.⁹

If in the young patient the doctor frequently faces only one disease, in the elderly the rule is that more than one disease coexists. The evaluation of the health of the elderly is carried out through a Comprehensive Geriatric Assessment (VGI). It is complemented by biomedical, functional and social evaluation instruments. As interpreted by the authors, VGI helps health professionals identify specific patient problems and needs and develop appropriate treatment plans.¹⁰

Among the main geriatric evaluation instruments, we can mention: Barthel index: evaluates a person's ability to perform activities of daily living, such as dressing, bathing and eating.¹¹ It is commonly used to evaluate the functional capacity of older adults and can help identify long-term care needs. The Geriatric Depression Scale is used to assess the presence and severity of depressive symptoms in older adults. There is also the Mini-Mental State Examination (MMSE) used to evaluate the cognitive function of older adults.¹² It focuses on areas such as memory, attention and language and can help identify cognitive problems such as dementia. The Charlson Comorbidity Index is used to evaluate the presence and severity of various chronic diseases in older adults.¹³ In addition, work is done with the Frailty Assessment Scale to evaluate frailty in older adults, which is defined as a decrease in physiological reserve that increases the risk of disability and mortality. It is essential that health professionals use appropriate evaluation instruments and apply them correctly to obtain precise and useful results.¹⁴ The VGI and the instruments that make it up are the tool that will allow the doctor to state the syndromes that you may have. the patient.

Dementia síndrome

Dementia involves a syndrome of successive decline in mental abilities (memory, orientation, reasoning, judgment), which is produced by different types of organic lesions of the brain, with sufficient severity to affect the patient's normal family or social development. They represent the fourth cause of years of life with disabilities. Symptoms may include memory loss, difficulty performing everyday tasks, disorientation in time and space, changes in behavior and personality, and communication problems.¹⁵

The etiology of dementia can vary depending on the type of dementia; The most common types of dementia are:

1. Alzheimer's disease: as Garre-Olmo¹³ mentions, it is the most common type of dementia. According to the World Health Organization (WHO), it affects around 60-70% of all people with dementia. It is considered one of the major geriatric syndromes and the most common cause of cognitive disorders in older adults; It is among the six conditions included by the WHO as a priority in relation to mental health, which is why it is called "the epidemic of the century." All studies on the incidence agree in showing that it is a pathology that increases with age and that presents an exponential growth pattern after the age of 65.¹⁴
2. Vascular dementia: is caused by a decrease in blood flow in the brain and can be caused by cardiovascular disease or stroke.
3. Dementia with Lewy bodies: it is characterized by the presence of Lewy bodies in the brain, which are abnormal protein deposits. According to the Alzheimer's Disease Association, Lewy body dementia accounts for 5% to 10% of all dementia cases.
4. Frontotemporal dementia: It is a type of dementia that affects the areas of the brain that control behavior, personality and language. According to Cruzado¹⁵, the first subtype, called behavioral variant frontotemporal dementia (bvFTD), is the most common and, due to its varied forms of presentation, it can be confused with primary psychiatric conditions such as depression, bipolar disorder, obsessive-compulsive disorder, and early-onset psychosis. tardiness, impulse control disorders and other pathologies. We agree entirely with your analysis.
5. Mixed dementia: Refers to a combination of different types of dementia, such as Alzheimer's disease and vascular dementia.¹⁶

Dementia is multi-causal; Within the elements related to etiology and physiopathogenesis, the existence of several risk factors that trigger alterations in cellular homeostasis is proposed, causing alterations in synaptic plasticity and mitochondrial damage, which produces a series of events such as protein disorganization. cytoskeletal and alteration of the synthesis and function of ubiquitin, as well as deregulation of second messengers with decreased functions and alteration of the information processing of neurotransmitters, in this way their synthesis can be affected. Furthermore, an increase

in the intracellular availability of calcium is shown, which stimulates kinases and proteases with an increase in the activity of protein kinases A and C, and abnormal phosphorylation of cytoskeletal proteins.¹⁶

In addition, there are several fewer common types of dementia, some of them are: inclusion body dementia, Creutzfeldt-Jakob disease, motor neuron body dementia, Huntington's disease dementia. Each type of dementia has its own characteristics and specific treatment needs, so it is important to seek appropriate medical care to establish an accurate diagnosis and appropriate treatment.^{17,18}

There are several known risk factors that can contribute to the development of dementia. These include: advanced age, family history, chronic diseases, brain injuries, unhealthy lifestyle (smoking, excessive alcohol consumption, lack of physical activity, unhealthy diet).¹⁹

In terms of comorbidity and pluripathology, dementias are often associated with other chronic diseases, such as cardiovascular disease, diabetes and depression. Additionally, people with dementia often have multiple medical conditions at the same time, known as pluripathology. This can complicate dementia treatment and increase the risk of hospitalization and death. Therefore, it is important that people with dementia receive comprehensive, coordinated medical care that addresses both the dementia and any other medical conditions they may have.²⁰

The diagnostic criteria for dementia vary depending on the type, but there are some criteria that are used to diagnose dementia in general. These include: cognitive impairment, affected daily functioning, duration of impairment, and exclusion of other causes. In addition to these general criteria, there are specific criteria for the diagnosis of different types of dementia, such as Alzheimer's disease, vascular dementia, and dementia with Lewy bodies. These criteria often include neuropsychological testing, brain imaging evaluations, and biomarker analysis. It is important to note that the diagnosis of dementia is a complex process that requires a complete evaluation by a trained health professional. Early and accurate diagnosis of dementia may be beneficial for the treatment and management of the disease.²¹

It is interesting to note that recent research has accumulated important epidemiological evidence

linking gait alterations and cognitive disorders. These interrelationships between poor gait patterns, small vessel brain disease, and cognitive decline in the neurodegenerative processes seen in aging are highly complex and not well understood. In summary, it can be stated that the presence of a pathological gait may be due to overlapping entities (neurodegenerative diseases and ischemic white matter lesions), and also represents a risk factor associated with dementia, and its origin may vary depending on the type of dementia (cortical or subcortical), without forgetting, regardless of current evidence, the individual particularities of each patient.²²

Geriatric-specific behaviors are behaviors that can occur in people with dementia and that can be difficult for caregivers and family members to manage. The most common are agitation, delusions, hallucinations, aggression, sexual disinhibition and apathy.²³

These behaviors are not an inevitable part of dementia and can be treated and managed effectively. Treatment approaches may include occupational therapy, behavioral therapy, and pharmacotherapy. It is also important that caregivers and family members receive support and training to manage these behaviors effectively and safely.²⁴

The prognosis of dementia varies depending on the type of dementia and the age and general health of the affected person. In general, dementias are progressive diseases that worsen over time and can have a significant impact on the quality of life of the affected person and their caregivers and family members.²⁴

Alzheimer's disease usually progresses slowly over several years. Life expectancy after diagnosis is three to nine years. Vascular dementia and dementia with Lewy bodies tend to progress more rapidly. It should be noted that the prognosis of dementia can be influenced by various factors, such as the person's age, general health, the presence of other diseases and the response to treatments. Early diagnosis and appropriate treatment can help improve the quality of life of people with dementia and delay the progression of the disease.²⁵

Depressive síndrome

Depression is a mood disorder that can affect people of all ages, including older adults. However, in these it may be more difficult to detect and treat due to factors such as chronic medical conditions, social isolation and physical disability.²⁶

The main symptoms of depression in older adults are persistent sadness, anxiety or a feeling of emptiness. Loss of interest in activities that were previously pleasurable; fatigue, tiredness, lack of energy, difficulty sleeping or sleeping too much. In addition, they may present changes in appetite or involuntary weight loss, as well as difficulty concentrating or making decisions. Also, feelings of worthlessness or excessive guilt and recurring thoughts of death or suicide. The diagnosis of depression should be made by a trained mental health professional and appropriate treatment can significantly improve the quality of life of those affected.²⁶

Depression in older adults can be caused by a variety of factors, such as the loss of loved ones, retirement, disability, and chronic illness. Additionally, some medications used to treat other medical conditions can also contribute to depression.²⁷

Calderón²⁷ found that the prevalence varies depending on the locality, country and the tool used for diagnosis. From the exposure of the risk factors, it is clear that the family, society and the state must undertake specific actions to especially alleviate modifiable factors such as social support and improving the quality of life of the elderly. It is considered that this measure should be applied in all health areas, especially in primary care.

It is important to highlight the importance of older adults who experience symptoms of depression to seek appropriate medical and psychological care. Treatment may include cognitive behavioral therapy, interpersonal therapy, and antidepressant medications. Additionally, they should benefit from participation in social activities and support programs to combat isolation and improve their quality of life.

Other complications that need special attention in this population segment are malnutrition and complications of immobility. In his study, Belaunde²⁹ corroborated that 61.3% (CI: 45.2-77.4) of patients with pressure ulcers suffered from poor nutrition and 51.6% (CI: 39.3-68.5) had dementia.

Similar studies reaffirm this hypothesis, closely related to the presence of frailty and disability syndrome.^{28,30}

Both dementia syndrome and depressive syndrome occur relatively frequently in the elderly. Many times, they coexist and overlap. And at the same time, it is essential to make a differential diagnosis between the two. The care of both syndromes must follow the principles of comprehensiveness, teamwork, leveled care and monitoring over time.

CONCLUSIONS

Population aging is an important phenomenon that has a significant impact on public health and the economy around the world. It is imperative that governments and public health organizations work to address the needs of the aging population and develop policies and programs that meet the needs of this ever-growing population.

Today in Cuba there is a predominance of the population that is going towards senescence accompanied by a high rate of senile dementia. These patients mostly present problems in their normal development in society and in the family. Therefore, the care and maintenance of the quality of life of people who suffer from it constitutes one of the most important health objectives and social challenges today. Dementia and depression are a current health problem in the geriatric population. It is considered essential to provide social support and improve the quality of life of the elderly.

DECLARATION OF CONFLICT OF INTEREST

The authors declare that they have no conflict of interest in the preparation of the research.

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