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The elderly and the state of mind in relation to the processes of attention and memory

El adulto mayor y el estado de ánimo en relación a los procesos de atención y memoria

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Abstract

In people older than 65 years, depression affects quality of life; depressed older adults generally have more anxiety. Objective: To determine mood states and their relationship with mild cognitive impairment in older adults. In the present investigation, depression was evaluated by means of the Beck Test, anxiety by means of the Hamiliton Test and cognitive deterioration by means of Mini Mental to 10 participants of the "Geronto Geriatrics" center of the State of Durango. Methodology: This is a quantitative, exploratory, non-experimental, observational and cross-sectional study with descriptive and correlational statistical analysis. Contribution: Chronbach's alpha of the analyzed data refers that the higher the anxiety and depression, the higher the prevalence of mild cognitive impairment with a moderate positive significance. The correlation between anxiety and neurocognitive functions was significant r = .50 with p = .55 with 95% reliability. And the correlation between depression and neurocognitive functions with an r = .40, with p = .15 with 95% reliability. The high frequency of the incidence of anxiety in the sample studied plus the significant correlation suggest the need to implement programs to address anxiety and depression in adulthood.

Depression, Anxiety, Older adults, Beck test, Hamilton test, Mini mental test

Resumen

En las personas mayores de 65 años, la depresión afecta la calidad de vida; los adultos mayores deprimidos generalmente tienen más ansiedad. Objetivo: Conocer los estados de ánimo y su relación entre el deterioro cognitivo leve en el adulto mayor. En la presente investigación se evaluó depresión mediante el Test de Beck, ansiedad mediante el Test de Hamiliton y deterioro cognitivo mediante Mini Mental a 10 participantes del centro “Geronto geriátrico” del Estado de Durango. Metodología: Es un estudio cuantitativo, de tipo exploratorio, no experimental, observacional y trasversal con un análisis estadístico descriptivo y correlacional. Contribución: El alfa de Chronbach de los datos analizados refiere que, a mayor ansiedad y depresión, mayor prevalencia de deterioro cognitivo leve con una significancia positiva moderada. La correlación entre ansiedad y funciones neurocognitivas resultó significativa r = .50 con p = .55 con una confiabilidad al 95%. Y la correlación entre depresión y funciones neurocognitivas con una r = .40, con p = 0.15 con una confiabilidad del 95 %. La alta frecuencia de la incidencia de la ansiedad en la muestra estudiada más la correlación significativa, sugieren la necesidad de implementar programas de atención a la ansiedad y depresión en la edad adulta.

Adulto mayor, Depresión, Ansiedad, Test mini mental

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Introduction

The affective or emotional component of the daily life of the older adult, often deprived of the warmth and support of the family group or a minimum of positive social interactions, confers different meanings to the gradual reduction of various biological, cognitive or sensory functions and, with it, a greater vulnerability to various agents or pathogenic factors. (Tello-Rodríguez, T, Alarcón, Renato D., Vizcarra-Escobar, Darwin, 2016, cited by Zambrano-Calozuma & Estrada-Cherre, 2020, p.10).

There are elements to take into account that determine the maintenance of cognition in the elderly patient such as; pathologies of the patient, social support, mood and the presence of geriatric syndromes such as frailty and osteopenia (Zambrano-Calozuma & Estrada-Cherre , 2020, p.9).

With ageing, there is the consequence of a degenerative process at the organic level, due to the accumulation of molecular errors, including in the brain. Dr. María Sagrario Manzano, a neurology specialist in Madrid at the Infanta Cristina Hospital, mentions that in the ageing brain, only certain areas where executive functions and memory are involved are affected. Throughout this process, neurons decrease in size and others die (Riojas-Duarte & Quintana-López, 2021, p. 9).

Memory and attention are higher brain functions that, under normal conditions, allow human beings to perform appropriately in personal and social life. To a large extent we are what we remember, and in doing so we can guide and inform our present and future behaviour (Zanín, Gil, & De Bortoli, 2004, p. 32).

Since these functions are of utmost importance for our lives, the question arises whether mood influences the alteration of these functions, hence the objective of this research which is to know the processes of attention and memory and their relationship with mood in the elderly through the application of the following tests: Hamilton test, Beck test and Mini-Mental Screening Test.

Justification

It is known that memory and attention are the main aspects of executive functions; as the years go by, the quality of life and health of people is affected by a decline in their functionality, which has social, mental and physical consequences (Riojas-Duarte & Quintana-López, 2021, p. 8).

Age-related memory problems are a cognitive alteration considered normal, they are mild forgetfulness. It has been suggested as a normal stage in the elderly. This event is known as Age-Related Memory Impairment (ARMD), but this cognitive alteration is not considered a disease (Sosa Sosa, 2016, p. 18).

Carbajal (2007) explains that in our country the majority of older adults who consult for memory loss do not have cognitive disorders, what they present are these subjective memory losses, where they believe they present a decrease in some cognitive function but in reality this loss is not made known after the corresponding tests have been carried out. This subjective loss is strongly related to anxieties, fears of developing dementia, relationship conflicts and attention problems of older adults. (Sosa Sosa, 2016, pp. 18 - 19)

In accordance with the aforementioned and seeing the importance of attention and memory in everyday life, it was considered important to carry out this research in order to verify the impact that the mood of older adults may have in relation to the loss or deterioration of attention and memory.

Based on the above, the interest of the present study lies in investigating attention and memory in older adults and their relationship with mood.

Problem

Depression is a common illness worldwide, with an estimated 3.8% of the population affected, including 5.0% among adults and 5.7% among adults over 60 years of age. Approximately 280 million people worldwide have depression. Depression can become a serious health condition. It can cause the affected person to suffer greatly and function poorly at work, at school and in the family. In the worst cases, depression can lead to suicide.

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More than 700 000 people die by suicide each year (WHO, 2021).

According to the World Health Organisation (WHO), dementia and depression affect approximately 5% and 7% of the world's older population, respectively. Anxiety disorders affect 3.8% of the older population (WHO, 2017).

Older people with depressive symptoms have poorer functioning compared to those with chronic medical conditions such as lung disease, hypertension or diabetes. (WHO, 2017).

Hypothesis

Ho: "Attention and memory processes are unrelated to older adults' mood states".

Hi: "Attention and memory processes are related to mood states in older adults".

Objectives

General objective

To identify the current state of neurocognitive functions: attention and memory, and their relationship with mood in older adults.

Specific objective

- To find out the total score of the Beck test for depressive mood in older adults.
- To find out the total score of the Hamilton test for anxious mood in the elderly.
- To identify the total score of attention and memory using the mini-mental screening test.

Theoretical framework

Background

Depression is a mental illness that affects more than 350 million people worldwide, with older adults being one of the most vulnerable groups.

According to IMSS, depression is a disease that is related to a decrease in serotonin, which is a neurotransmitter that regulates the emotions of well-being and sleep; it causes a change in their energy, and is reflected in a series of alterations in which feelings of sadness and low willpower dominate. (IMSS, 2020).

According to the National Institute for the Elderly (INAPAM), depression can cause great suffering and disrupts daily life. Worldwide, depression affects 7% of the general population of older people.

In Mexico, studies report that depression is the most frequent affective disorder in people over 60 years of age, that is, 15-20% in the outpatient population, increasing to 25-40% in hospitalised patients (INAPAM, 2019).

Regarding anxiety symptoms, it was found that 19.3% of the adult population has symptoms of severe anxiety, while another 31.3% show symptoms of minimal or some degree of anxiety, so 49.3% do not have it (INEGI, 2021). (INEGI, 2021)

It is estimated that in Mexico at least 14.3% of citizens suffer from generalised anxiety disorders, the most common mental health illness in the country, followed by depression and addictions, both at 9% (Senado de la Republica, 2019). (Senado de la Republica, 2019).

The world's population is ageing rapidly. Between 2015 and 2050, it is estimated that the proportion of older adults in the world will almost double, from around 12% to 22%. In absolute terms, this is an expected increase from 900 million to 2 billion people over the age of 60. Older people face special physical and mental health problems that need to be recognised.

More than 20% of adults aged 60 years and older suffer from a mental or neurological disorder (excluding headache disorders) and 6.6% of all disability (disability-adjusted life years-ADALYs) among people aged 60 years and older is attributed to mental and neurological disorders.(WHO, 2017)

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Attention and memory

Memory:

Memory is a neurocognitive function that enables previously stored information to be recorded, encoded, consolidated, retained, stored, retrieved and recalled. While learning is the capacity to acquire new information, memory is the capacity to retain learned information (Portellano, 2005, p. 227).

Basically, we can establish two main types of memory depending on the time elapsed for its storage: short-term memory and long-term memory (Portellano, 2005, p. 233).

1. Short-term memory (STM)

This is the process of initial retention of information for a short period of time ranging from a few fractions of a second to several minutes, although some authors place the time limit of short-term memory at 30 seconds. Before the perceptual processing of information can take place, it is necessary for the sensory encoding of the stimuli to be memorised, which is why there are several modalities within short-term memory: sensory memory, immediate memory and working memory (Portellano, 2005, p. 233). (Portellano, 2005, p. 233).

2. Long-term memory (LTM)

This is the ability to retain information for longer periods of time or permanently. LTM also refers to the ability to recall information after an interval of time in which the subject has focused on another task. (Portellano, 2005, p. 235)

Attention:

Attention is in charge of carrying out the information selection process within the nervous system, being the fundamental element that articulates all cognitive processes. Alterations in attention always produce cognitive disorders of greater or lesser intensity (Portellano, 2005, p.143).

Attention is not a unitary process but a complex, dynamic, multimodal and hierarchical functional system that facilitates the processing of information, selecting the relevant stimuli to carry out a specific sensory, cognitive or motor activity. Attention, therefore, consists of selectively focusing on a given stimulus, filtering, discarding and inhibiting unwanted information. In order to carry out any cognitive process, it is necessary that a certain degree of selection of the stimuli that access the nervous system is previously produced, through the implementation of attentional mechanisms (Portellano, 2005, p. 143).

As a complex function, not only are several areas of the nervous system involved, but attention is at the crossroads of multiple sub-functions such as level of awareness, orientation, concentration, processing speed, motivation, direction, selectivity or alternation. According to this, the structure of attention is made up of different hierarchical layers of greater or lesser complexity, which are articulated in the form of neural networks located in various nerve structures. The more passive processes related to involuntary attention are located in the deeper areas of the brain, while those requiring a greater degree of voluntary selection are located in the cortical areas. The supramodal structure of attention is articulated in three levels of increasing complexity: alertness, sustained attention and selective attention. (Portellano, 2005, p. 143 - 144).

Older adults

In Mexico, Older Adults are considered to be people over 60 years of age and refer to the stage that adds up all the experiences of life and passes through most of the family, professional and social goals. But it also marks the beginning of a stage where people present conditions of physical, social and economic vulnerability. (GOB, 2017).

Ageing involves a series of physical, psychological and social changes related to changes in all organs, including the brain. With the passage of time, a series of cognitive modifications begin involving memory, language, perception and attention. These cognitive changes constitute one of the central factors of late life (Ardila & Rosselli, 2007, p. 227).

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Individuals between 55 and 74 years of age are considered young senile, those over 75 years of age are considered old senile, and those over 85 years of age are considered older senile. (Ardila & Rosselli, 2007, p. 227).

Mental health

According to the WHO, mental health is a state of well-being in which an individual is aware of his or her own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to his or her community. (WHO, 2018)

Mental health is fundamental to our collective and individual capacity as human beings to think, emote, interact with each other, earn a living and enjoy life. On this basis, the promotion, protection and restoration of mental health can be considered a vital concern of individuals, communities and societies around the world. (WHO, 2018)

Mental health has an impact on physical health and vice versa. For example, older adults with physical health conditions such as heart disease have higher rates of depression than those who are healthy. In addition, untreated depression in an older person with heart disease can negatively affect their outcome. (WHO, 2017)

Attention and memory impairment in the older adult.

Memory:

Senescence is associated with a decline in memory and learning ability. The rate of forgetfulness increases while the ability to acquire new information decreases. These difficulties begin around the fifth decade of life and progressively increase. This memory decline is slow in normal ageing, but accelerated in the case of dementia (Ardila & Rosselli, 2007, p. 229).

One of the most striking aspects of memory in the elderly is the difficulty in recalling recent events, despite being able to describe old events with relative ease, particularly those related to emotional situations. Age does not seem to affect older memory, but recent memory does (Ardila & Rosselli, 2007, p. 230).

With age, the capacity to store recent information decreases. The subject manages to assimilate immediate information, but does not adequately convert it into long-term traces. These storage difficulties are evident for both verbal and non-verbal material (Crook et al., 1986), although greater defects are noted in non-verbal memory (Eslinger et al., 1988). Age reduces not only the storage capacity, but also the recall process (Poon, 1985) (Ardila & Rosselli, 2007, p. 230) (Ardila & Rosselli, 2007, p. 230).

Working memory capacity is another factor that appears to alter with age. This type of memory refers to the ability to process information while maintaining in recent memory the results of that processing, the goals and the strategies used (Raz, 2000) (Ardila & Rosselli, 2007, p. 230).

Attention:

The drawbacks in attention in old age as explained by Pousada et al (2006) are performing several tasks simultaneously, taking and selecting the information that is important at the necessary moment from that which is not important, i.e. difficulties in divided attention and selective attention are present respectively.(Sosa Sosa, 2016, p. 16)

Instruments

Hamilton test

It is a scale whose aim is to assess the intensity of anxiety. It consists of a total of 14 items that assess the psychological, physical and behavioural aspects of anxiety. In addition, one item specifically assesses depressed mood.

The items are non-specific manifestations of anxiety and have not been shown to be useful for the assessment of a specific anxiety disorder.

The time frame of reference is the last three days for all items except the last item, which assesses the subject's behaviour during the interview.

It is a hetero-applied scale, created with simple instructions to assign the most appropriate scores for each patient, in order to increase inter-rater reliability.

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The following is a brief description (valid for all 13 items)

1. Identify from all possible symptoms for each item the most problematic symptom in the last few days, and which is certainly due to anxiety.

2. Determine for that symptom these three aspects: its severity, its frequency of depression and the disability or dysfunction it produces.

    a) Severity: 1-mild (minor). 2-moderate (disturbance). 3-severe (very annoying) 4-the worst symptom I have ever experienced.

    b) Time/frequency: 1- infrequent. 2-occurs in the middle of the day or less. 3-occurs most of the day. 4-occurs almost all the time.

    c) Disability: 1-symptoms do not interfere with activities. 2 - symptoms interfere with some activity. 3-symptoms cause inability to carry out daytime activities (social, work and family). 4-symptoms cause inability to perform activities in two or more of the above areas.

Correction and interpretation

It provides an overall measure of anxiety, which is obtained by the sum of the scores obtained. The recommended cut-off points are:

0-5 No anxiety

6-14 Mild Anxiety

>15 Moderate/severe anxiety.

Beck Depression Test (BDI-IA)

The Beck Depression Scale is one of the instruments frequently used to assess depressive symptoms (González et al., 2014).

The Beck Depression Inventory, second edition (BDI-IA) is a self-report instrument composed of 21 items, whose purpose is to measure the severity of depression in adults and adolescents aged 13 years and older.

This version of the BDI was developed to assess the symptoms corresponding to the diagnostic criteria for descriptive depressive disorders in the Diagnostic and Statistical Manual of Mental Disorders Fourth Edition (DSM-IV, 1994) of the American Psychiatric Association (Beck, 2009).

The Beck Inventory meets the psychometric requirements for valid use in our setting. In terms of factorial composition, construct validity, discriminant validity and internal consistency, they corroborated the adequate psychometric properties of the BDI-IA, which support it as a sufficiently valid and reliable instrument for the measurement of depressive symptoms in the Mexican population, which also supports the cross-cultural validity of the instrument (Beck, 2009); (Beltrán, 2012).

The cut-off scores proposed by Beck et al. (1996) were appropriate for discriminating between different degrees of depression (see Table 1).

Total scores	Level of depression
<=9	Normal
10-15	Slightly depressed
16-24	Moderately depressed
25-62	Severly depressed

Table 1 Total score for the interpretation of the results of the Beck Test inventory

Mini-Mental Screening Test

The Mini-Mental State Examination (MMSE) is a written test commonly used as part of the process when considering a diagnosis of dementia, with a maximum score of 30, with lower scores indicating more severe cognitive problems. It is one of the most widely used tools worldwide for its brevity and easy application (Tombaugh and Mcintyre, 1992), it has 10 areas of assessment: spatial-temporal orientation, three-word registration, attention fixation, memory, verbal nomination, repetition and comprehension, reading, writing and visuospatial construction, (Mora Villalobos, et al., 2017). The cut-off point established for the MMSE defines "normal" cognitive function and is generally set at 24, although theoretically it could be anywhere between 1 and 30 (Arevalo-Rodriguez I, cited by Llamuca Quinaloa, Macías Guamangate, Miranda Caisaluisa, & Tapia Cerda, 2020, p. 317).

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When starting the test, it is advisable to begin by collecting the patient's data, as well as their level of schooling and the work they did before retirement (the year they started school and the year they finished, approximately). This will also help to create a degree of trust with the patient and facilitate their collaboration.

If we analyse the MMSE, we see that it consists of 5 sections: (1st) Orientation, (2nd) Fixation, (3rd) Calculation and attention, (4th) Memory and (5th) Language and praxis.

When carrying it out, we should not interrupt it, especially the sequence of fixation, calculation and attention and memory. Between the 1st and 2nd, and between the 4th and 5th, we can make a brief pause if the patient is tired or very nervous, trying to reassure them and tell them that it is not an exam.

With all this, we have reached the end of the test and must make the correction for age and cultural level. After reviewing the MMSE, the following agreement was reached (see table 2).

Range	Anxiety level
< = 24	Probable cognitive impairment
> 24	No cognitive impairment

Table 2 Total score for the interpretation of the results of the Mini-mental screening test

Schooling refers to the age at which they completed their studies, not to the number of years they attended school. Broadly speaking, the first group includes those who have not completed primary school, the second group includes those who have completed primary school and those who have a baccalaureate, and the third group includes those who have a higher baccalaureate or degree. Patients with depression and anxiety tend to score low in this type of test due to impaired attention and concentration, without this being indicative of MCI or dementia (the response of "I don't know, I don't know" to simple orientation or calculation questions is characteristic, and which they end up doing if we insist that they pay attention and make an effort).

Research methodology

The present study is an exploratory, non-experimental, observational, cross-sectional study with descriptive and correlational statistical analysis.

The complex variables of mood, anxiety and depression were analysed for their relationship with neurocognitive functions by means of minimental. In addition, the following variables were considered: age, gender and school grade.

For the statistical analysis of the characteristics of the studied population, measures of central tendency were used and for the correlational analysis a Pearson correlation coefficient was used.

Inclusion criteria were participants aged between 60 and 90 years at the Geronto Geriatric Centre who wished to participate in the study and who had signed a letter of informed consent; therefore, those who did not wish to participate were excluded.

As elimination criteria, participants who left any of the assessment tests unfinished, previous neurodegenerative diseases and non-attendance at the assessments, as well as patients who wished to withdraw from the study, were excluded.

According to these criteria, out of a total of 20 patients, 10 were eliminated, leaving a total of 10 valid cases for the research.

Procedure

The participants were patients attending a geriatric geriatric centre called "taking care of those who gave us life" in the city of Durango. Data collection was carried out during February 2021, culminating at the end of February of the same year.

Informed consent was obtained after signing the informed consent form in accordance with the official Mexican standards 004-ssa3-2012 on clinical records and 040-ssa2-2004 on information, and the instruments for data collection and interpretation of the results were applied.

The following tests were used for the study: "Beck test", "Hamilton test" and "minimental screening test".

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The Beck depression test is a 21-item self-administered inventory that assesses the intensity of depression. For each item, the subject has to choose the statement that, from a set of four alternatives (always in order of severity), best fits his or her mood during the last week. Each item is scored from 0 to 3 points depending on the alternative chosen, the resulting total score has a range between 0 and 63 points.

The Hamilton test is a hetero-applied scale consisting of 14 items assessing psychological, physical and behavioural aspects of anxiety. The time frame of reference is the last three days for all items except the last item, which assesses the subject's behaviour during the interview.

It is classified by the following severity values: 1, mild, of little importance; 2, moderate severity and alterations; 3, severe alterations derived from the symptoms, very annoying; 4, the worst symptom ever experienced. Each item is rated from 0 to 4 points depending on the alternative chosen, and its cut-off points are: 0-5: no anxiety. 6-14: mild anxiety. >15: moderate/severe anxiety.

The mini-mental screening test is a screening instrument that evaluates cognitive alterations. Depending on the scores obtained by the subject, it is able to distinguish between normal cognitive functioning, mild, moderate and severe dementia.

It consists of 5 sections: (1st) Orientation, (2nd) Fixation, (3rd) Calculation and attention, (4th) Memory and (5th) Language and praxis.

After the application of the 5 sections we will have reached the end of the test and we will have to correct for age and cultural level. After reviewing the MMSE we arrive at the following suggestions or guidelines for interpretation:

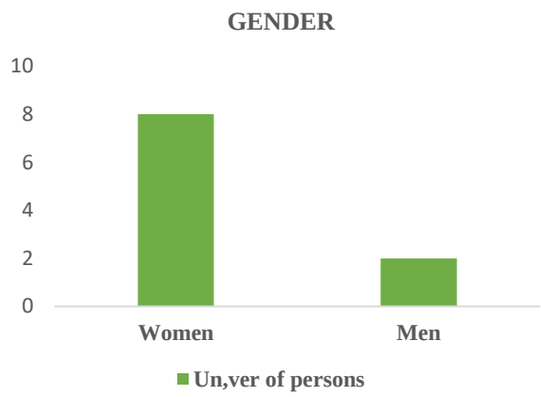
Probable cognitive impairment: Score < 24. No cognitive impairment: Score > 24.

The identification of the signalistic variables and academic performance (gender, age and school average) was obtained through the application of a clinical survey.

Statistical analysis of the information obtained was carried out using Excel software.

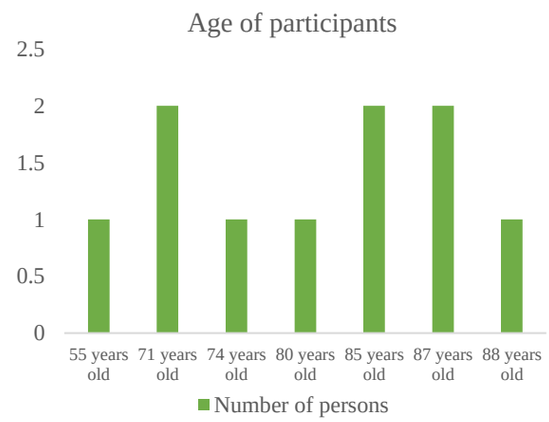
Results

The sample studied consisted of 10 participants, who attend the "geriatric centre: caring for those who gave us life", of which 8 (80%) are female and 2 (20%) are male (see graphic 1).



Graphic 1 Frequency by gender

The mean age of the participants was 78.3 years, with a minimum of 55 years and a maximum of 88 years, with a mode of 71 years, the standard deviation was 82.5 (see graphic 2).



Graphic 2 Frequency by age

The reliability of the results obtained in the evaluation of the Hamilton Anxiety Test was a Chronbach's alpha .69 (very reliable). As for the results obtained from the assessment of anxiety using the Hamilton test, 2 participants (20%) did not show any level of anxiety, while 8 participants (80%) showed some degree of anxiety. Of which, according to the Hamilton scale, 6 participants represent 60% and are at a mild level of anxiety. And 2 participants corresponding to 20% are at a moderate/severe level of anxiety. (See table 3).

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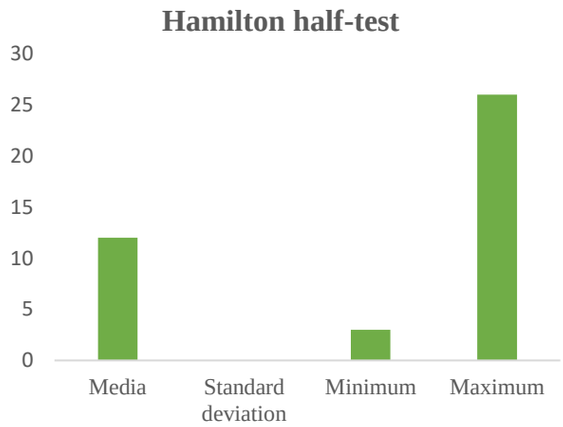
Range	Frecuency	Percent	Anxiety level
0 – 5	2	20 %	No anxiety
6 – 14	6	60 %	Slight
> 15	2	20 %	Moderate/severe

Table 3 Results of the Hamilton test (Anxiety)

The mean of the total score of the Hamilton Anxiety Test is 12 with a standard deviation of 7.21.

This indicates that most of the participants who show anxiety are at a mild level of anxiety. (See graphic 3).



Graphic 3 Measures of central tendency of Hamilton's total score

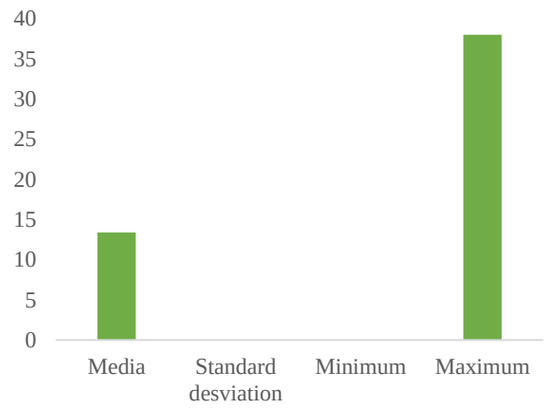
The reliability of the results obtained in the evaluation of the Beck Depression Test was with a Chronbach's alpha of .90 (excellent reliability).

As for the results obtained from the evaluation of depression using the Beck test, 7 participants (70%) did not show any level of depression, while the other 30% showed some degree of depression (see table 4).

Range	Frecuency	Percent	Depression level
< = 9	7	70%	Normal
10 – 15	0	0%	Mild
16 – 24	0	0%	Moderate
25 +	3	30%	Severe

Table 4 Results of the Beck's test evaluation

The mean of the total Beck test score is 13.4, a median of 8 and a mode of 9, a standard deviation of 14.56, a minimum value of 0 and a maximum of 38 (see graph 4).



Graphic 4 Measures of central tendency of Beck's total score

This indicates that 70% of the population is within normal parameters while 30% is at a severe level of depression.

The reliability of the results obtained from the Mini-Mental Test was Chronbach's alpha of .66 (very reliable).

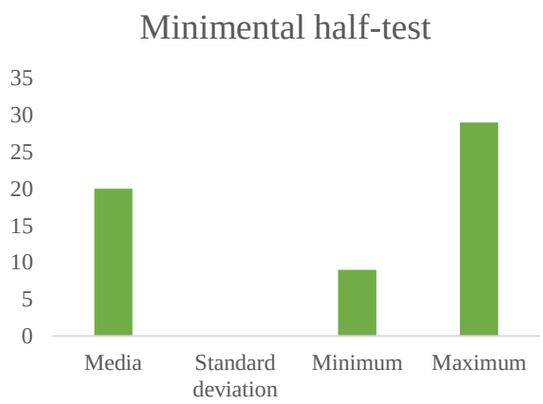
As for the results obtained from the Mini-Mental Test, 8 participants (80%) showed probable cognitive impairment, while 2 participants (20%) showed no cognitive impairment. (See table 5).

Range	Frecuency	Percent	Anxiety level
< = 24	8	80%	Probable cognitive impairment
> 24	2	20%	No cognitive impairment

Table 5 Results of the evaluation of the Mini-Mental Test

As for the results obtained from the application of the Mini-Mental Test, 8 participants (80%) showed probable cognitive impairment, while 2 participants (20%) showed no cognitive impairment (see table 5).

This indicates that the majority of the participants show probable cognitive impairment (see graph 5).



Graphic 5 Measures of central tendency of the Mini-Mental total score

Correlational analysis

When performing the Pearson correlational analysis between anxiety and attention and memory, a moderate positive significance was found with an r = .50 with p = .55 with a reliability of 95%, which indicates that the higher the level of anxiety, the greater the deterioration of the cognitive functions of attention and memory, and therefore, the greater the prevalence of mild dementia.

	Average	anxiety score
Pearson correlation		.50*
Next Bilateral		.55
N.	10	10
* The correlation is significant at the 0.05 level (bilateral).		

Table 7 Correlation between anxiety and attention and memory

In the following Pearson correlational analysis between depression and attention and memory, he found a level of moderate positive significance with r = .40, with p = 0.15 with a reliability of 95%, which means that, in a moderate positive way, a higher level of depression greater deterioration of cognitive functions attention and memory.

	Average	anxiety score
Pearson correlation		.40*
Next Bilateral		0.15
N.	10	10
* The correlation is significant at the 0.05 level (bilateral).		

Table 8 Correlation between depression and cognitive decline

Conclusion

In the present research we found relevant data between mood states (anxiety and depression) and cognitive skills attention and memory, since 80% of the population shows anxiety correlated with cognitive impairment. However, only 20% of the population showed depression correlated with deterioration in attention and memory skills.

Therefore, the greater the alteration of mood (anxiety and depression), the greater the prevalence of mild cognitive impairment in the elderly.

Finally, the general and specific objectives are fulfilled and our research hypothesis is accepted in the "Geriatric geriatric geriatric centre of the state of Durango".

It is of great interest to continue with the research since the results cannot be extrapolated because it is only a pilot study, however, there is a moderate positive correlation between the alteration of mood and cognitive processes.

Therefore, it is recommended to provide attention and support to the elderly in terms of mood, as it has a great impact on their mental health. It is also proposed to stimulate neurocognitive functions or implement workshops.

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