



Depression in older adults from the municipality of Mochitlan, Guerrero (Mexico)

Depresión en adultos mayores del municipio de Mochitlán, Guerrero

Depressão em idosos do município de Mochitlán, Guerrero

Leticia Reyna-Avila^{1*} orcid.org/0000-0001-9862-4062

Elvia Peña-Marcial¹ orcid.org/0000-0003-1232-6000

Rodrigo Pérez-Cabañas¹ orcid.org/0000-0002-3417-2308

Luz Areli Lorenzo-Ángel² orcid.org/0000-0002-9045-1950

Diana Molina-Machuca² orcid.org/0000-0002-0612-072X

José Martín Aparicio-Tejeda² orcid.org/0000-0002-6406-3348

1. Escuela Superior de Enfermería No. 1, Universidad Autónoma de Guerrero. Chilpancingo, México.
2. Licenciatura en Enfermería, Universidad Autónoma de Guerrero. Chilpancingo, México.

Received: Feb 05 - 2023

Revised: Oct 10 - 2023

Accepted: Nov 07 - 2023

Published: Dec 19 - 2023

Citation: Reyna-Avila L, Peña-Marcial E, Pérez-Cabañas R, Lorenzo-Angel LA, Molina-Machuca D, Aparicio-Tejeda JM. Depresión en adultos mayores del municipio de Mochitlán, Guerrero. *Univ. Salud.* 2023;25(3):56-62. DOI: [10.22267/rus.232503.319](https://doi.org/10.22267/rus.232503.319)

Abstract

Introduction: Depression in older adults is an important aspect since it affects significantly their health and quality of life. As people age, they may experience physical, emotional, and social changes that make them more susceptible to depression. Based on estimations from the World Health Organization, the global population over 60 years of age with some depressive symptoms will increase from 12% to 22% between 2015 and 2050. **Objective:** To identify the prevalence and factors associated with depression in older adults from the municipality of Mochitlan, Guerrero. **Materials and methods:** Mixt quantitative research with an analytical cross-sectional design and a simple random sampling of 26 older adults. Information was collected through a multiple choice survey administered by the researchers using an instrument with four sections. The ethnographic method was used for the qualitative approach, through a semi-structured interview to a focus group of seven older adults, with 3 open questions. **Results:** Mild (38.46%), moderate (7.69%), and serious (3.85) was found. The associated factors were: female gender; type of work; and monthly income. The qualitative analysis showed positive and negative emotions. **Conclusions:** 50% of the population had some type of depression.

Keywords: Emotions; affective disorders, psychotic; mental health. (Source: DeCS, Bireme).

Resumen

Introducción: La depresión en adultos mayores es un tema importante debido a que afecta de manera significativa la salud y calidad de vida. A medida que las personas envejecen, pueden experimentar cambios físicos, emocionales y sociales que los hacen más susceptibles a tener depresión. La Organización Mundial de la Salud (OMS) estima que entre 2015 y 2050 la población mundial mayor de 60 años pasará del 12% al 22% de padecer algún síntoma depresivo. **Objetivo:** Identificar la prevalencia y factores asociados a la depresión en adultos mayores del Municipio de Mochitlán, Guerrero. **Materiales y métodos:** Investigación mixta, cuantitativa con diseño transversal analítico, muestreo aleatorio simple en una población de 26 adultos mayores, se recabó información mediante una encuesta aplicada por los investigadores con opción múltiple utilizando un instrumento de cuatro apartados. Para el enfoque cualitativo se utilizó el método etnográfico, mediante una entrevista semiestructurada con 3 preguntas abiertas a un grupo focal de siete adultos mayores. **Resultados:** Se encontró depresión leve (38,46%), moderada (7,69%) y grave (3,85%). Los factores asociados fueron género femenino, tipo de trabajo; ingreso mensual. El análisis cualitativo mostro emociones positivas y negativas. **Conclusiones:** 50% de la población presento algún tipo de depresión.

Palabras clave: Emociones; trastornos psicóticos afectivos; salud mental. (Fuente: DeCS, Bireme).

Resumo

Introdução: A depressão em idosos é um tema importante porque afeta significativamente a saúde e a qualidade de vida. À medida que as pessoas envelhecem, elas podem passar por mudanças físicas, emocionais e sociais que as tornam mais suscetíveis à depressão. A Organização Mundial da Saúde (OMS) estima que entre 2015 e 2050, a população mundial com mais de 60 anos passará de 12% a 22% sofrendo de alguns sintomas depressivos. **Objetivo:** Identificar a prevalência e os fatores associados à depressão em idosos do município de Mochitlán, Guerrero. **Materiais e métodos:** Pesquisa mista, quantitativa, com desenho analítico transversal, amostragem aleatória simples em população de 26 idosos, as informações foram coletadas por meio de questionário aplicado pelos pesquisadores com múltipla escolha por meio de instrumento de quatro seções. Para a abordagem qualitativa utilizou-se o método etnográfico, por meio de entrevista semiestructurada com 3 questões abertas a um grupo focal de sete idosos. **Resultados:** Foi encontrada depressão leve (38,46%), moderada (7,69%) e grave (3,85%). Os fatores associados foram sexo feminino, tipo de trabalho; ingresso mensal. A análise qualitativa evidenciou emoções positivas e negativas. **Conclusões:** 50% da população apresentou algum tipo de depressão.

Palavras chave: Emoções; transtornos psicóticos afetivos; saúde mental. (Fonte: DeCS, Bireme).

*Corresponding Author

Leticia Reyna-Avila
e-mail: crysl81@hotmail.com

Introduction

In older adults, the emotional situation is affected by various factors such as physical health, social relationships, traumatic events and/or significant losses, among others. Therefore, they usually experience feelings of loneliness, isolation, and, consequently, depression⁽¹⁾.

Depression is one of the main mental disorders with the highest prevalence in older adults and its development is affected by different factors. The WHO estimates that by 2030 the main cause of death worldwide will be mental disorders. These estimations indicate that between 2015 and 2050 the world population over 60 years of age with some type of depressive symptoms will grow from 12% to 22%. Currently, the worldwide prevalence of depression in older adults is 13.5 %⁽²⁾. In Mexico, mental disorders rank fourth between all medical cases, being depression one of the most frequent illnesses (7.8%)⁽³⁾.

Depression in older adults is a disorder that affects significantly the quality of life of this population. This emotional illness is characterized by persistent feelings of sadness, loss of interest in activities that they used to enjoy, sleeping difficulties, changes in appetite, and reduced energy. It can also trigger memory and concentration problems as well as thoughts of death or suicide^(4,5).

There are several factors associated with depression in older adults, including presence of chronic diseases (diabetes or cardiovascular diseases), the loss of loved ones and friends, loneliness, social isolation, financial problems, changes in their social roles, and lack of family support. All these factors can have a negative impact on their emotional well-being^(4,5).

It is important to highlight that depression is not a normal event during the aging process and that it can be effectively treated. Early diagnosis and access to appropriate treatment (e.g. cognitive behavioral therapy and antidepressant medications) can improve their symptoms and quality of life⁽⁶⁾.

Therefore, the objective of this study was to identify the prevalence and factors associated with depression in older adults from the municipality of Mochitlan, Guerrero. In addition, this research was aimed at describing their emotional state, since, to the best of our knowledge, there are no current studies focused on assessing this problem in this particular population.

Materials and methods

Study type

The research followed a mixed approach. Whereas the qualitative approach applied an ethnographic method, the quantitative cross-sectional analytical component used a simple random sampling method, through the formula: $\frac{Npq}{(N-1)D+pq}$. A sample of 26 out of 51 older adults was obtained, with a limit for the estimation error equals to 0.00403846154.

Instrument

Information collection was conducted directly at two time points. In the first one, qualitative data was

obtained through an instrument that has four sections: sociodemographic data, health status, substance use, and geriatric depression. For the last item, the Yesavage (GDS-15) geriatric depression scale was applied, which was designed by Jerome A. Yesavage and collaborators in 1983. In 1986 the scale was modified to a shorter version containing 15 positive and negative questions, which can be answered as "yes" or "no"⁽⁷⁾. Its internal consistency is 0.78. The Kaiser-Meyer-Olkin test to measure sampling adequacy produced a coefficient of 0.70 and a construct reliability of 0.87. This instrument is recommended by the National Institute of Geriatrics for its application in geriatric populations⁽⁸⁾. The Cronbach's Alpha coefficient was used for the reliability or internal consistency of this research, with a result of 0.867.

Qualitative data was collected during the second time point through a semi-structured interview that contained three open questions and was applied to the focus group made up of seven older adults who agreed to participate. The COVID-19 pandemic was a factor that limited a greater participation. The questions were taken and adapted from Yesavage (GDS-15) geriatric depression scale. The oral responses were recorded to guarantee a complete register.

The dependent variable was Depression, which was measured through the Yesavage (GDS-15) geriatric depression scale that included 15 items. The score contained four ranges: normal (0-4); mild (5-8); moderate (9-10); and serious (12-15). The independent variables were sociodemographic data, characteristics of the home, basic services, tenure, and number of people living in the home, accompaniment (living alone or accompanied), epidemiological data (diseases diagnosed in older adults) and substance consumption.

The analysis of quantitative data was carried out through the SPSS version 21 statistical package. The descriptive analysis was conducted using graphs and tables with frequencies and percentages. Chi², Tau-b, and Tau-c were applied to the bivariate analyses of the relationship between dependent and independent variables. The qualitative assessment involved the initial transcription of the interviews and the data were interpreted through codes, subthemes, and themes, which facilitated the interpretation of the findings. Subsequently, the themes were described based on theoretical aspects and validated with the content of the interviews.

Ethical considerations

The participants were male and female adults aged 60 years and older, from the municipality of Mochitlan, Guerrero, who agreed to participate voluntarily by signing the informed consent that explained clearly the objectives of the study, procedures to be carried out, possible risks and benefits associated with their participation, as well as the guarantee of privacy and confidentiality. The study was conducted from October 2021 to July 2022.

The study was reviewed and approved by researchers and professors of the University and followed the ethical principles established in article

100 of the Health General Law and the official Mexican Standard NOM-012-SSA3-2012^(9,10).

Results

65.38% of the participants were women (17). The mean age was 71.81 years (standard deviation of 8.025), while the age range was 60 to 99 years. 80.77% (21) were married, 50% (13) had a job, 8 of them being farmers (61.54%) and 7 participants working more than 7 hours a day (53.85%). 96.15%

of the participants had a monthly income that was lower than \$500 MXN (25).

Based on the Geriatric Depression Scale (GDS-15), 65.4% of participants prefer to stay at home, 53.8% think that the majority of people are in a better situation, 46.2% have stopped doing the activities or tasks that they used to do, 42.3% feel useless, and 38.5% mention that they feel helpless and unprotected (Table 1).

Table 1. Items of the Geriatric Depression Scale (GDS-15) applied to the study population

Item	Yes		No	
	F	%	f	%
1- Generally speaking, are you satisfied with your life?	23	88.5	3	11.5
2- Have you dropped many of your usual tasks and hobbies?	12	46.2	14	53.8
3- Do you feel that your life is empty?	10	38.5	16	61.5
4- Do you often get bored?	5	19.2	21	80.8
5- Are you in good spirits most of the time?	19	73.1	7	26.9
6- Are you afraid that something bad is going to happen to you?	8	30.8	18	69.2
7- Do you feel happy most of the time?	25	96.2	1	3.8
8- Do you often feel helpless or unprotected?	10	38.5	16	61.5
9- Do you prefer stay at home, rather than going out and doing new things?	17	65.4	9	34.6
10- Do you feel that have more problems with memory than most people?	6	23.1	20	76.9
11- Right now, do you that is wonderful to be alive?	26	100	0	0
12- Do you feel pretty worthless the way you are now?	11	42.3	15	57.7
13- Do you feel full of energy?	24	92.3	2	7.7
14- Do you feel that your situation is hopeless?	7	26.9	19	73.1
15- Do you think that most people are better off than you are?	14	53.8	12	46.2

Source: Depression survey in older adults from the Municipality of Mochitlan, Guerrero. May 2022

50% (13) of participants had depression, of which 38.46% (10), 7.69% (2), and 3.85% (1) had mild, moderate, and serious depression, respectively (Figure 1). It was found a relationship with bone fractures (χ^2 0.000) and associations with the following variables: gender (Tau-C 0.268); importance of religion in their lives (Tau-C 0.846); being born in the municipality (Tau-C 0.580);

knowing how to read (Tau-C 0.733); type of job (Tau-C 0.332); working hours (Tau-C 0.329); monthly income (Tau-C 0.298); being affiliated to a health institution (Tau-C 0.249); type of material being used to build most of the house (Tau-C 0.27); and whether the participants like to live with the people they are with now (Tau-C 0.685) (Table 2).

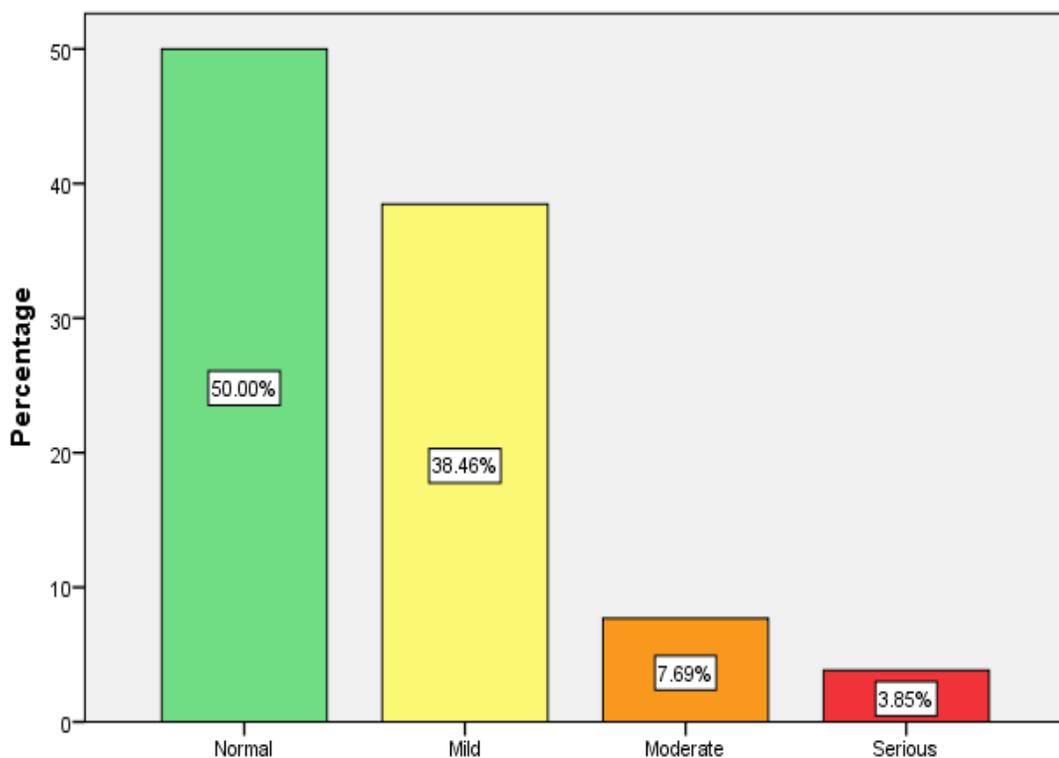


Figure 1. Depression in interviewed older adults

Table 2. Distribution of depression according to its relationship or association with the independent variables

Variable	Depression										X ²	Tau-c
	Normal		Mild		Moderate		Serious		Total			
	f	%	f	%	f	%	f	%	f	%		
Gender											0.485	0.268
Female	7	26.92	8	30.77	1	3.85	1	3.85	17	65.39		
Male	6	23.08	2	7.69	1	3.85	0	0	9	34.62		
How important is religion in your life?											0.305	0.846
Important	10	38.46	9	34.62	2	7.69	0	0	21	80.68		
Regular	2	7.69	1	3.85	0	0	1	3.85	4	15.39		
Does not know	1	3.85	0	0	0	0	0	0	1	3.85		
Are you originally from this municipality?											0.783	0.580
Yes	7	26.92	5	19.23	1	3.85	0	0	13	50		
No	6	23.08	5	19.23	1	3.85	1	3.85	13	50.01		
Do you know how to read?											0.569	0.733
Si	5	19.23	3	11.54	1	85	1	3.85	10	38.47		
No	8	30.77	7	26.92	1	3.85	0	0	16	61.54		
Type of job											0.174	0.332
Farmer	6	46.15	1	7.69	1	7.69	0	0	8	61.53		
Other	2	15.38	3	23.08	0	0	0	0	5	38.46		
Daily working hours											0.489	0.329
5 to 6 hrs.	3	23.08	2	15.38	1	7.69	0	0	6	46.15		
7 to 8 hrs.	5	38.46	2	15.38	0	0	0	0	7	53.84		
Monthly income											0.792	0.298
Less than \$ 500	12	46.15	10	38.46	2	7.69	0	0	24	92.3		
\$ 500 to \$ 1000	1	3.85	0	0	1	3.85	0	0	2	7.7		
Are you affiliated to a healthcare institution?											0.252	0.249
Yes	8	30.77	4	15.38	0	0	1	3.85	13	50		
No	5	19.23	6	23.08	2	7.68	0	0	13	49.99		
What is the healthcare institution to which you belong?											0.713	0.290
INSABI	7	53.85	4	30.77	0	0	1	7.69	12	92.31		
ISSSTE	1	7.69	0	0	0	0	0	0	1	7.69		
What material is most of the floor in your home made of?											0.308	0.27
Soil	5	19.23	1	3.85	0	0	0	0	6	23.08		
Cement or brick	8	30.77	9	34.62	2	7.69	1	3.85	20	76.93		
Do you have any bone fracture?											0	0.109
Yes	0	0	0	0	1	3.85	0	0	1	3.85		
No	13	50	10	38.46	1	3.85	1	3.85	25	96.16		
Do you like to live with the people you are living now?											0.036	0.685
Yes	12	46.15	10	38.46	1	3.85	1	3.85	24	92.31		
No	1	3.85	0	0	0	0	0	0	1	3.85		
Does not know/ Does not answer	0	0	0	0	1	3.85	0	0	1	3.85		

The qualitative analysis focused on interviews of seven older adults and covered three aspects: feelings-emotions; health issues; and protection.

In the Feelings-emotions found, some were positive, in which peace, tranquility and well-being were expressed, that is, a state of calm and satisfaction where the older adult enjoys his or her time of rest and carries out activities normally, feeling strong and with vitality to continue living (OA1, OA3). "I feel a little calm" (OA1, OA3). They also express excitement, they report feeling strength, energy and courage to endure and face difficulties that they experience in this stage, such as the changes and situations or difficulties that arise. (OA1, OA4). "I don't feel helpless, for me it is a weakness" (OA1, OA4).

A feeling of safety is also a positive emotion, understood as a state where danger and other conditions that may cause physical, psychological or material damage can be controlled in order to preserve health and well-being. Consequently, older adults need a greater care to avoid accidents and this is the reason why sometimes they prefer to stay at home since it is the only place where they feel safe. "When I am at home I am fine, I am not going out anymore (OA7). "Better being at home rather than being somewhere else" (OA6).

Negative feelings in older adults were expressed by a change in mood, there are changes in the emotional aspect, different negative emotions are presented, which can sometimes be controlled (OA5). That is to say, memories make people feel emotions. When thinking about the past, the older adult longs for the times when he could work and support his home. Unfortunately, the years have passed and he has lost his capacity with the passage of time (OA7). "I was a working man and now I can't do it anymore. When I go to the field and I want to cut firewood, the ricochets of the ax hurt me. [...] (OA1, OA7).

Hopelessness is the feeling of not finding alternative solutions to a certain situation or not having expectations for the future. Older adults feel this way because they cannot improve their lives, they feel they are useless, and the only thing that is coming is death. "I cannot do things as I used to do it and that bothers me. How I will be able to survive now that I am not able to do anything, that is the problem" (OA7).

Different emotions were manifested, including externalized boredom due to feeling uninterested in what surrounds them, having nothing to do or feeling that life is boring. However, fun or recreational activity was manifested, understood as an activity

that takes place in free time, being a moment of distraction and rest from usual activities.

“Sometimes I go out with my children to have fun but it is not fun if the situation is not convenient for me” (OA5). “When I am at home I get bored. I must go out even if it is to the town or where I work and when I come back I am relieved how I am not used to being without doing something, I was a working man” (OA7).

In health problems, physical deterioration caused by a series of changes and complications was evident, affecting physical capacity, mainly walking, which may be due to the wear and tear that occurs around the age of 60, reducing bone mass and tissues, they atrophy, this results in older adults losing the ability to move and perform activities. “I can't work anymore” (OA1); “I cannot walk”; “[...] at home what else can I do, I work with my pickaxe, I sit for a while when I get tired, my shoulders are torn” (OA7).

Protection is expressed by feeling security and family support, caring for a person so that they do not suffer harm and protecting them; in addition to care between members who have family ties or ties and live in the same home. “[...] when children have obligations, there is little they can help you now because they have their children, before they did it because they did not have a family, I feel that with a lot of work I am getting ahead with my family and I will help with what I can, it is no longer the same as before [...]” (AM7).

Boredom can cause depression. It is an emotional state of where the interest and motivation to carry out diverse activities are lost. Older adults experience these feelings due to changes that they experience at this stage and/or difficulties caused by diseases that prevent them from performing normal activities such as farm work. Therefore, they feel bored being at

home and they like to go out to do the activities they used to do before in order to feel lightened, but sometimes their health situation becomes a limitation (OA2, OA7). “I feel bored because I cannot walk or go out” (OA2). “[...] yes, I get bored, I must go out even if it is to the town or where I work and when I come back I fell relieved. I am not used to this feeling as I was a working man and now I feel like this, I need to walk through the fields, but I cannot do it anymore” (OA7).

Helplessness is expressed by feeling vulnerable, alone, sad and afraid; when there is no one to take care of them, it produces a feeling of inner unrest. In older adults this is closely related to the presence of diseases or mobility problems that limit the ability to work, generating economic instability; they report receiving very little or no help from their children (OA2, OA6, and OA7). “I can't work anymore” (AM2) “Sometimes I get desperate because of illnesses” (AM6) “[...] I can't work like before, that's what saddens me, what to do to support myself, is the problem [...] I feel that with a lot of work we are coping with things with my family and I will help with what I can, it is no longer the same, for that reason I feel sad, helpless or useless for no longer being able to do things like before [...]” (AM7).

Depression is one of the main reasons why older adults decide not to leave the house since it is a condition that affects their thoughts and feelings, which causes them to stay at home and lose the desire to go out. Some of the reasons to avoid going out are: older adults may not be in the mood or feel without energy; joint problems; or body pain (e.g. hips, shoulders, elbows, wrists, fingers, knees, and ankles, among others). “[...] yes because I cannot walk” (OA2), “Sometimes when my children go out I go with them to have fun, but if the situation is not convenient for me then I do not go” (OA5) (Figure 2).

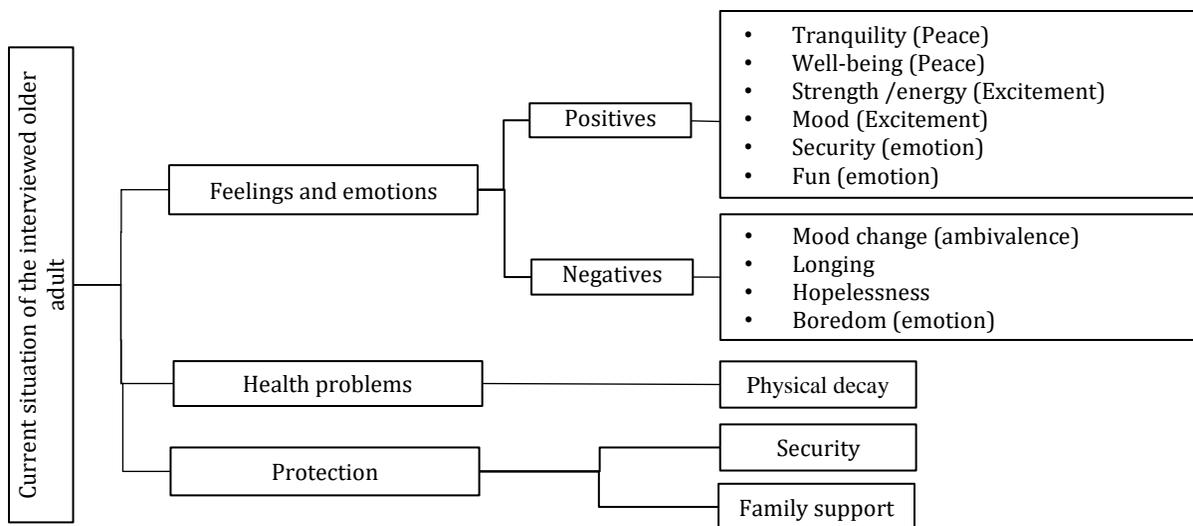


Figure 2. Data analysis scheme

Discussion

Research on depression in older adults is a topic of great relevance because of the increase in their life expectancy and the fast growing rate of this population worldwide. Depression in this age group is a serious public health problem as it can have significant consequences for the quality of life and well-being of older adults. The prevalence of depression varies considerably, according to

estimations from different studies. The prevalence registered in this study (50%) is similar to the one obtained by Peña *et al.*⁽¹¹⁾ in Guerrero (50.7%) and Salvador *et al.*⁽¹²⁾ in Ecuador (54.9%), but it is lower than the figures reported by Miranda *et al.*⁽¹³⁾ (89%) in Ecuador, Cárdenas *et al.*⁽¹⁴⁾ (81%) and De los Santos *et al.*⁽¹⁵⁾ in México (74,3%). In contrast, our prevalence value is higher than the one reported by Borrayo *et al.*⁽¹⁶⁾, in Guatemala.

This study found mild (38.46%), moderate (7.69%), and serious (3.85%) depression in the study population. These results differ from those reported by Peña-Marcial *et al.*⁽¹¹⁾, who registered 81% and 16% for moderate and serious depression, respectively. Similarly, Miranda *et al.*⁽¹³⁾ observed a 60% of mild depression and a 29% of established depression; as well as the study by Lliguisupa *et al.*⁽¹⁷⁾, who report 35.3% mild depression and 11% established depression.

The results show that depression affects both genders differently (0.268). This observation coincides with the study of Cardenas *et al.*⁽¹⁴⁾, who reported that depression was more common in women, suggesting a relationship between gender and depression ($\chi^2=823$ and $p=0.007$). Also, Miranda *et al.*⁽¹³⁾, and Salvador *et al.*⁽¹²⁾, have shown that women are at a higher risk for depression. Likewise, Peña-Marcia *et al.*⁽¹¹⁾, reported that 50.7% of the study population were women experiencing some degree of depression.

The data from this research carried out show that the type of job (0.332) and monthly income (0.298) were related to the presence of depression. These results coincide with the study by Cárdenas *et al.*⁽¹⁴⁾, in which a relationship was found with domestic activities and not doing any activity, presenting a higher frequency of moderate depression in 79.8% and 77.8% respectively ($\chi^2=13.27$ and $p=0.004$). Socioeconomic status also showed a relationship with depression, as did the study conducted by Miranda *et al.*⁽¹³⁾, in which low socioeconomic status was a potential risk factor for depression (55%). The data of this investigation also show that type of job (0.332) and monthly income (0.298) are related to the presence of depression.

Likewise, this study found a relationship of other factors such as the importance of religion in their lives (0.846), being native (0.580), knowing how to read (0.733), number of daily working hours (0.329), belonging to a healthcare institution (0.249), type of institution (0.290), construction material of the home floor (0.325), the person feels comfortable living alone or with other people (0.044). A relationship with the presence of bone fractures was identified χ^2 ($p=0.000$). However, these findings differ from the results of other studies.

The feelings-emotions present in this stage were positive such as tranquility, well-being, strength, encouragement, security and fun and/or negative which included mood swings, longing, hopelessness and boredom. It is mentioned that there are physical problems due to wear and tear, which makes walking difficult, and for this reason older adults prefer to stay at home where they feel comfort, security and protection, some have the support that their family provides them.

These findings coincide with the study by Estupiñán-Palacios *et al.*⁽¹⁸⁾, who found that health problems lead to a feeling of hopelessness and emptiness in your life. The data is based on what is reported by the Ministry of Health of Colombia, about the aging process, which brings with it the loss of the ability to develop habits, causing significant changes in the environment⁽¹⁹⁾. Also coinciding with the study by Martínez-Mendoza

et al.⁽²⁰⁾, which showed the presence of diseases, as well as alterations in their emotional state due to loneliness and distance from their loved ones, which is reflected in sadness, irritability and melancholy.

Samaniego-Zhunio *et al.*⁽²¹⁾ showed that emotions are a reaction that includes experiential, behavioral and physiological elements, through which the person tries to deal with a significant situation or event.

Conclusions

Our results show that depression is a multifactorial health problem that affects older adults, as it is the last stage of their lives when they face: losses, crisis, as well as physical, psychological, family, social, and economic decay, which manifest as mood changes, longing, and hopelessness that sometimes they cannot handle, triggering a great risk for the appearance of diseases. Nevertheless, there are also positive feelings such as tranquility, strength, encouragement, and security, which function as protective factors and may improve the quality of life of older adults.

Recommendations: Health care professionals should conduct continuous screening strategies to identify properly and quickly depression in the elderly population and implement proper interventions coordinated with a multidisciplinary and interdisciplinary team, involving the family, in order to follow up on diagnosed adults according to the Mexican Official Standard NOM-025-SSA2-2014.

To encourage the personnel who work at first level assistance institutions to conduct home visits in order to know, prevent, and follow up on problems and/or needs of older adults.

It is suggested that professional from education institutions should conduct research on elderly populations that live at their own homes in order to identify problems they may experience and search for strategies to improve their quality of life.

Acknowledgments: to the local authorities as well as to the older adults and their families for their support and participation in this study.

Funding sources: the study was financed by the author's own resources.

Conflict of interests: none declared by the authors

References

1. Alvarado García AM, Salazar Maya ÁM. Descubriendo los sentimientos y comportamientos que experimenta el adulto mayor con dolor crónico benigno. Gerokomos [Internet]. 2016 Dic; 27(4):142-146. Available from: https://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S1134-928X2016000400003
2. Organización Mundial de la Salud. Salud mental de los adultos mayores [Internet]; 2017 [cited 2022 Dic 23]. Available from: <https://www.who.int/es/news-room/fact-sheets/detail/la-salud-mental-y-los-adultos-mayores>
3. Cruz LEL, Ledezma JCR. Indicadores de Depresión en Adultos Mayores de 60 a 75 años en Ixmiquilpan Hidalgo. Journal of Negative and No Positive Results [Internet]. 2019 Oct 1 [cited 2023 Dec 6];4(10):976-987. DOI: 10.19230/jonnpr.3056
4. Molés Julio MP, Esteve Clavero A, Lucas Miralles MV, Folch Ayora A. Factores asociados a la depresión en personas mayores de 75 años de edad en un área urbana. Enferm Glob

- [Internet]. 2019 Jul; 18(3):58-70. DOI: 10.6018/eglobal.18.3.324401
5. IMSS. Depresión en el adulto mayor [Internet]; 2020 [cited 2023 Oct 12]. Available from: <http://www.imss.gob.mx/salud-en-linea/preguntas-de-salud/depresion-adultomayor>
 6. Instituto Nacional de las Personas Adultas Mayores de México. Importancia de las redes de apoyo social para las personas mayores [Internet]. 2020 [cited 2023 Oct 12]. Available from: <https://www.gob.mx/inapam/articulos/importancia-de-las-redes-de-apoyo-social-para-las-personas-mayores>
 7. Instituto Nacional de Geriátrica de México. Guía de instrumentos de evaluación geriátrica integral. Secretaría de Salud de México; 2020. Available from: <https://www.gob.mx/inger/documentos/guia-de-instrumentos-de-evaluacion-geriatrica-integral>
 8. Gómez-Angulo C, Campo-Arias A. Escala de Yesavage para Depresión Geriátrica (GDS-15 y GDS-5): estudio de la consistencia interna y estructura factorial. *Universitas Psychologica* [Internet]. 2011;10(3):735-743. Available from: <https://www.redalyc.org/articulo.oa?id=64722377008>
 9. Secretaria de Salud de México. Ley general de Salud [Internet]. 1984. Available from: http://www.salud.gob.mx/unidades/cdi/legis/lgs/LEY_GENERAL_DE_SALUD.pdf
 10. Diario Oficial de la Federación (DOF). Norma Oficial Mexicana NOM-012-SSA3-2012 [Internet]. Secretaría de Gobernación de México; 2013. Available from: https://dof.gob.mx/nota_detalle.php?codigo=5284148&fecha=04/01/2013
 11. Peña Marcial E, Bernal Mendoza LI, Reyna Avila L, Pérez Cabañas R, Cruz Arteaga IA, Onofre Ocampo DA, et al. Depresión en adultos mayores, un estudio comparativo en Guerrero. *Ciencia y Humanismo en la Salud* [Internet]. 2019 Abr 16;6(1):14-21. Available from: <https://revista.medicina.uady.mx/revista/index.php/cienciayhumanismo/article/view/120>
 12. Salvador-Aguilar AD, Salvador-Aguilar VA, Vela Chasiluisa MA. Depresión en el adulto mayor, factor predisponente para la mala calidad de vida. *Dom Cien* [Internet]. 2020; 6(4):98-109. Available from: <https://dialnet.unirioja.es/servlet/articulo?codigo=8385943>
 13. Miranda de Jesús Y, Álvarez Orozco ME, Álvarez Hernández HJ, Jaimes Cortes D, Alvarado Reyes ER. Factores que desencadenan depresión en el adulto mayor de la comunidad de Santiaguito Maxda, Estado de México. *Dilemas Contemp Educ Política Valores* [Internet]. 2020;8(5). Available from: https://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S2007-78902020000800003
 14. Molina Vargas LR. Determinantes socioculturales relacionados con el desarrollo de depresión en el adulto mayor con diabetes mellitus tipo 2 y/o hipertensión arterial [Trabajo de Grado]. Ambato (ECU): Universidad Técnica de Ambato; 2021 Apr 1. Available from: https://repositorio.uta.edu.ec/bitstream/123456789/32823/3/16_molina_vargas_lucia_del_rocio%281%29.pdf
 15. De los Santos PV, Carmona Valdés SE. Prevalencia de depresión en hombres y mujeres mayores en México y factores de riesgo. *PSM* [Internet]. 2018;15(2):95-119. DOI: 10.15517/psm.v15i2.29255
 16. Borrayo A, Fernández D, Barrientos E, Mendoza K, Barrera A. Depresión asociada al estado nutricional en adultos mayores. *Rev Med* [Internet]. 2017 Dic 30;156(2):96-98. Available from: <https://www.revistamedicagt.org/index.php/RevMedGuatemala/article/view/66>
 17. Lliguisupa-Peláez V, Álvarez Ochoa R, Bermejo-Cayamcela D, Ulloa-Castro A, Estrada-Cherres J. Niveles de depresión en adultos mayores atendidos en un hospital de segundo nivel. *Ciencias Pedagógicas E Innovación* [Internet]. 2020 Jun 30;8(1):16-21. Available from: <https://repositorio.upse.edu.ec/bitstream/46000/8352/1/UPSE-RCP-2020-Vol.8-No.1-003.pdf>
 18. Estupiñán Palacios SK, Ávila Díaz DY, Suárez Ávila MC. Factores que inciden en los niveles de depresión en adultos mayores de la fundación el Edén en el municipio de Apartadó [Internet]. Urabá (COL): Corporación Universitaria Minuto de Dios; 2021 [cited 2023 Oct 18]. Available from: https://repository.uniminuto.edu/bitstream/10656/12866/1/UVDT.P_Estupi%C3%B1anSandra_2021.pdf
 19. Martínez Acevedo KL, Toro Suarez T, Vargas Calderon J. Estado emocional de los adultos mayores en institucionalización [Tesis]. Universidad Cooperativa de Colombia; 2021 Jun 22. Available from: <https://repository.ucc.edu.co/items/b6312999-2a49-4c01-8dbf-0acaa0100787>
 20. Martínez Mendoza MC, Gutiérrez Mendía A, Bonaparte Caballero E, Gómez Alons C, Lajud N. Prevalencia de depresión en adultos mayores en una unidad de medicina familiar de Michoacán. *Atención Familiar* [Internet]. 2021 Mar 23;28(2):125-131. Available from: https://www.revistas.unam.mx/index.php/atencion_familiar/article/view/78803
 21. Samaniego Zhunio MC, Pino Vela JA. Inteligencia emocional y depresión en adultos mayores, casa hogar virgen del Carmen, Chambo, 2018. Riobamba (ECU): Universidad Nacional de Chimborazo; 2019. Available from: <http://dspace.unach.edu.ec/handle/51000/5322>