



Vol 15, N° 1








<https://revistas.usb.edu.co/index.php/IJPR>

ISSN 2011-2084

E-ISSN 2011-7922

Factors Associated with Happiness in Rural Older Adults: An Exploratory Study

Factores asociados a la felicidad en adultos mayores rurales: Un estudio exploratorio

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 OPEN ACCESS

Manuscript received: 04-09-2021

Revised: 16-12-2021

Accepted: 15-02-2022

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Declaration of data availability: All relevant data are within the article, as well as the information support files.

Conflict of interests: The authors have declared that there is no conflict of interest.

How to Cite:

Arias-Monsalve, A. M., Arias Valencia, S., Rubio-León, D. C., Aguirre-Acevedo, D.-C., Rengifo Rengifo, L., Estrada Cortés, J. A., & Paredes Arturo, Y. V. (2022). Factors Associated with Happiness in Rural Older Adults: An Exploratory Study. *International Journal of Psychological Research*, 15(1), 70–83. <https://doi.org/10.21500/20112084.5910>



Abstract.

Introduction: Aging is a phenomenon that has increased worldwide as a result of a higher life expectancy, evidencing situations typical of this stage, which can impact the happiness of individuals, who deserve attention and approach from mental health and public health. **Objective:** to explore the association between sociodemographic characteristics, medical history and symptoms, emotional state, social support, cognitive performance, and functional dependence, in relation to happiness in older adults in a rural area of Túquerres, Nariño. **Method:** cross-sectional study of association. Results: There were 252 records in total, corresponding to the data of rural older adults. A multivariate linear regression was performed, finding an association with happiness in the variables of age ($\beta_a = .41$; CI95% .09 – .73), socioeconomic level ($\beta_a = -.22$; CI95% -.58 – .13), education level ($\beta_a = .41$; CI95% .68 – 1.49), occupation ($\beta_a = .59$; CI95% -.48 – 1.67), having chronic disease ($\beta_a = .42$; CI95% .12 – .73), breathing difficulties ($\beta_a = -.25$; CI95% -.51 – .02), joint pain ($\beta_a = .55$; CI95% .26 – .83), depression symptoms ($\beta_a = -.21$; CI95% -.48 – .06] or anxiety ($\beta_a = .40$; CI95% .72 – .07), and social support ($\beta_a = -.27$; CI95% -.52 – -.02). **Discussion:** this population has unfavorable socioeconomic and health conditions that impact their perception of happiness. Conclusion: happiness is a multicausal phenomenon that in older adults is part of the result of the interaction of variables and historical decisions at a political, economic, and social level.

Resumen.

Introducción: El envejecimiento es un fenómeno que ha aumentado a nivel mundial como consecuencia de una mayor esperanza de vida, evidenciando situaciones propias de esta etapa, que pueden impactar en la felicidad de los individuos, quienes merecen la atención y el abordaje desde la salud mental y la salud pública. **Objetivo:** explorar la asociación entre las características sociodemográficas, los antecedentes y síntomas médicos, el estado emocional, el apoyo social, el desempeño cognitivo y la dependencia funcional, con la felicidad en los adultos mayores de una zona rural de Túquerres, Nariño. **Método:** estudio transversal de asociación, con análisis de datos secundarios. Resultados: Se contó con 252 registros en total, correspondientes a los datos de los adultos mayores rurales. Se realizó una regresión lineal multivariable, encontrando asociación con la felicidad de las variables nivel socioeconómico ($\beta_a = -.22$; C95% -.58 – .13), nivel de escolaridad ($\beta_a = .41$; IC95% -.68 – 1.49), ocupación ($\beta_a = .59$; IC95% -.48 – 1.67), contar con enfermedad crónica ($\beta_a = .42$; IC95% .12 – .73), dificultades para respirar ($\beta_a = -.25$; IC95% -.51 – .02), presentar dolor en las coyunturas ($\beta_a = .55$; IC95% .26 – .83), presentar síntomas de depresión ($\beta_a = -.21$; IC95% -.48 – .06] o de ansiedad ($\beta_a = .40$; IC95% .72 – .07) y apoyo social ($\beta_a = -.27$; IC95% -.52 – -.02). **Discusión:** esta población cuenta con condiciones socioeconómicas y de salud desfavorables que impactan en su percepción de felicidad. Conclusión: La felicidad es un fenómeno multicausal que en los adultos mayores hace parte del resultado de la interacción de variables y decisiones históricas, a nivel político, económico y social.

Keywords.

Older adults; Happiness; Subjective well-being; Rural Population; Rural Health.

Palabras Clave.

Adulto mayor; Felicidad; Bienestar subjetivo; Población rural; Salud rural.

1. Introduction

Happiness is a concept that has been tried to be defined since ancient times, either from hedonism or from virtue, but to date there is no consensus on its precise definition (Domínguez Bolaños & Ibarra Cruz, 2017). However, its study has become important, especially with the birth of positive psychology as a science, which main task is understanding what makes life worth living (Seligman, 2002). In particular, it has been planted as an objective to promote the development of qualities for life, that is, work on the strengths that help to cope with different life situations and in the prevention of mental illnesses (Ryff, 2022).

To achieve this, there are several areas that this field of knowledge seeks to incorporate. Thus, at the subjective level, it includes the positive subjective experience, in which well-being, satisfaction, joy, and happiness are addressed, as well as constructive cognitions about the future such as optimism, hope, and faith. Also, there are the individual and social areas. The first emphasizes positive personal traits, as the capacity for love and vocation, interpersonal skills, aesthetic sensitivity, perseverance, forgiveness, among others. Finally, regarding the group, the civic characteristics and the institutions that move individuals towards better citizenship are treated (Ryff, 2022).

Regarding the positive subjective experience, Veenhoven (2018) states that there are four basic elements for its study: the opportunity of a good life, the good life itself (as a result), and the characteristics, which can be internal or external. Thus, by uniting the internal characteristics with the good life itself, the authors approach the concept of subjective enjoyment of life, that is, in Veenhoven's words, "the quality of a life in the eye of the beholder of that life" (Veenhoven, 2018, p. 5). In this way, this subjective enjoyment corresponds to the following terms: subjective well-being, satisfaction with life, and happiness.

In turn, the subjective satisfaction of life has several distinctions, fundamental for the study of happiness, and these are based on four polarities: whether it is part of life, or life as a whole, and pleasure as a passenger or satisfaction durable. Based on this, and supported by the postulates of Jeremy Bentham, Veenhoven defines happiness as "the degree to which an individual judges the overall quality of his/her own life-as-a-whole favorably—in other words, how much one likes the life one leads" (Veenhoven, 2018).

In line with this, Alarcón (2006) adopted happiness as an "affective state of full satisfaction that a person experiences subjectively"¹ (p. 101), which is considered synonymous with subjective well-being. In addition, he developed the Lima Happiness Scale, where he

proposes an approach to this construct through the *positive sense of life*, the *satisfaction with life*, the *personal fulfillment*, and the *joy of living* (Alarcón, 2006). This instrument, initially designed for the Peruvian population, has had wide research acceptance in Latin America, being adapted in countries such as Venezuela, Argentina, and Mexico (Árraga Barrios & Sánchez Villarroel, 2012; Auné et al., 2017; Rodríguez-Hernández et al., 2017).

In general, happiness is a construct that contributes to the development of a full life, which includes both physical and mental well-being, but it takes on special relevance in the aging stage, which can be established, according to the life cycle, from 60 years onwards (Alvarado García & Salazar Maya, 2014; Rice, 1997), since there is an expected physical and cognitive deterioration. Consequently, this makes older adults more vulnerable to present negative thoughts, feelings, and behaviors that affect their perception of worth and meaning of life (Gómez-Restrepo et al., 2013).

In addition, the aging of the population worldwide has been increasing. According to the World Health Organization (WHO), between 2015 and 2050, the population over 60 years of age will increase from 12% to 22% (2017), figures that coincide with those estimated for Colombia (Dirección de Epidemiología y Demografía, 2018). This implies an increase in the demand for health care related to chronic diseases and deterioration of both physical and mental health, which requires looking at the needs of this age group (World Health Organization, 2017).

In contrast, Alvarado et al. found that satisfaction with life can increase with age, as long as there is social support, adequate and stable economic income, and a good perception of physical health. Otherwise, life satisfaction tends to decrease (Alvarado et al., 2017). It has also been documented that happiness tends to increase when social, physical, cognitive, and restful activities can be carried out, in addition to being studied as a mediating variable (Cardona Arango et al., 2018). Thus, the authors found that happiness is a predictor of family functionality in older adults, which in turn is associated with not having a risk of depression and having social support, among other variables (Cardona Arango et al., 2018).

According to the previous statements, it can be said that the importance of the study of happiness has been identified, both as a result of the interaction of social, family, economic, and individual situations and conditions, as well as the role it plays in the perception of aging and its mediating role in social situations and health outcomes, which reflects the complexity of this phenomenon.

Likewise, aging in rural populations should begin to arouse greater interest for researchers and government entities, since they are areas in which access to health services and social protection is more limited, an aspect that impacts the possibility and opportunity of reaching active and healthy aging. In turn, this plays an important

¹This translation and the following are ours, and they are done only for academic purposes.

role in their perception of well-being and happiness. Some studies show that in this context there are higher rates of chronic diseases, and the social determinants of health are increasingly precarious, which has repercussions on the physical and mental health of these population groups (Garbaccio et al., 2018; Segura-Cardona et al., 2018).

Regarding the rural population of Túquerres, in the department of Nariño, there are no research references that include, in addition to sociodemographic data and social support, the study of emotional states and happiness, which could give an approximation to the state of mental health of this population, and thus be able to rely on sufficient data to support decision-making in health care and social protection.

The total population of this municipality is 40599 inhabitants, of which 17503 (43.11%) live in urban areas and 23096 (56.89%) live in rural areas, and 49.46% are women (Alcaldía Municipal de Túquerres en Nariño, 2016). According to this, the rural area of Túquerres is inhabited in a higher percentage than the total of the municipality and has low living conditions. According to the *Índice de pobreza multidimensional municipal* [Municipal Multidimensional Poverty Index], for 2018, the populated and dispersed rural centers had an index of 42.3%, which classifies these households in a situation of poverty, while in the municipal seat of Túquerres it was 18.1% (DANE-Departamento Administrativo Nacional de Estadística, 2018).

In particular, the situation of the older adult in rural areas is classified as vulnerable, not only because they belong to the rural area, but also due to conditions such as low levels of schooling, houses built with mud and tiles, unpaved access roads, among others, hindering mobility, both for the extraction of products and for access to appropriate health systems, social resources, and transportation (Alcaldía Municipal de Túquerres en Nariño, 2016; Castillo Burbano, n.d.).

Based on this, the present study sought to contribute to the development of knowledge of the happiness of older adults in rural areas, with a view to making decisions in health, with a preventive approach. Therefore, the objective of the present study was to explore the association between happiness and sociodemographic characteristics, medical history and symptoms, emotional state, social support, cognitive performance, and functional dependence in older adults of this area.

2. Methodology

2.1 Methodological Design

This was a cross-sectional, exploratory study for the association of sociodemographic characteristics, medical history and symptoms, emotional state, social support, cognitive performance, and functional dependence in accordance to the level of happiness of older adults in a rural area, located in Túquerres, Nariño.

2.2 Population

The population consisted of a total of 3454 older adults, that is, according to the development life cycle, which would correspond to adults older than or equal to 60 years of age, residing in the rural area of the Municipality of Túquerres, Nariño. In this case, those who are between 60 and 103 years old. Consequently, the sample consisted of a total of 252 older adults, aged between 60 and 94 years.

2.2.1 Eligibility Criteria

The eligibility criteria considered in the original study were the following:

Inclusion criteria: 1. Adults older than 60 years of age; 2. Voluntary participation in the study and signing of the informed consent; 3. Be registered in the database of the Sisben Municipal of Túquerres; 4. Belong to the rural area of the municipality.

Exclusion criteria: having a medical or cognitive implications that prevents the instruments' application.

2.2.2 Ethical Considerations

The study was submitted to different research and ethics committees, complied with the provisions of the Resolución 8430 de 1993 del Ministerio de Salud Nacional [National Ministry of Health's Resolution 8430 of 1993], which in turn includes the Declaration of Helsinki and the Belmont Report, given that the informed consent of the participant was obtained, complying with article 7, that dealt with the random selection of participants, and article 8, which referred to confidentiality of information (Ministerio de Salud, 1993). Also, in accordance with Article 11, literal b), this study was classified as research with minimal risk, because the procedures that were carried out, such as the application of questionnaires, did not represent risk for the participant, as it was disclosed in the informed consent.

The study had the approval of the Comité de Investigación de la Universidad Mariana de Pasto, Nariño [Research Committee of the Universidad Mariana de Pasto], the Secretaría de Salud de Túquerres, Nariño [Department of the Ministry of Health in Túquerres], and finally, from the Comité de Ética de la Universidad de Antioquia [University of Antioquia's Ethics Committee].

2.3 Instruments

2.3.1 Sociodemographic characteristics and medical history and symptoms

The survey that was applied in this study was designed and previously used in a study developed by the researcher Yenny Paredes, called *Valoración multidimensional de los adultos mayores de San Juan de Pasto* [Multidimensional Assessment of older adults in San Juan de Pasto] (Rosas Estrada et al., 2015).

2.3.2 Functional dependency

VIDA Questionnaire for Assessing Instrumental Activities of Daily Living (iADL) in the Elderly (Lesende et al., 2012, 2020). It was developed for the Spanish population aged greater than or equal to 75 years. Assesses the independent performance of ten activities, rated on a Likert scale with 3 to 4 answers, in which the higher the score, the higher the degree of functionality. Its score is from 10 to 38 points. The established levels are: less than or equal to 19 – Requires help; between 19 and 29 points – Performs simple tasks; and greater than 29 – Independent. It has a Cronbach's alpha of .94.

2.3.3 Cognitive performance

Mini-Mental (MMSE). It is a screening test created in 1975 by Folstein and McHugh (Rojas-Gualdrón et al., 2017). It is made up of 30 dichotomous items that evaluate six cognitive processes: Temporal Orientation, Spatial Orientation, Fixation Memory, Evocation Memory, Attention and Calculation, and Language (Rojas-Gualdrón et al., 2017). The version validated by the Neurosciences group of the University de Antioquia for the Colombian population was used, with a maximum score of 30 points and a cut-off point of 24. The intra-class correlation coefficient (ICC) obtained by the older adults was .82 with a 95% CI .73 – .87 (Aguirre-Acevedo et al., 2007; Mandeville, 2005).

2.3.4 Emotional State

YESAVAGE Geriatric Depression Scale adapted version (GDS). This screening test was constructed by Brink, Yesavage, Lum, Heersema, Adey, and Rose in 1982, specifically for older adults, and was adapted for older Colombian adults by Bacca et al. (2005), with a reliability coefficient of .72. It evaluates the presence of depressive traits in the old adult population, inquiring about cognitive symptomatology. For the data of this research, the version validated by the Neurosciences group of University of Antioquia was applied, with a maximum score of 15, and dichotomous response options, in which 0 to 5 points equals normal or absent of symptoms; from 6 to 10, moderate depression; and from 11 to 15, severe depression.

Hamilton Anxiety Rating Scale (HARS). It is a screening test designed in 1959 by Max R. Hamilton for the assessment of anxiety. It consists of 14 items that evaluate the severity of the symptoms, using 5 ordinal response options, with zero (0) being the absence of the symptom and four (4) being the presence of very severe or disabling symptoms; of these, 13 items refer to anxious signs and symptoms and the last one assesses the patient's behavior during the interview. The range goes from 0 to 56 points; the higher the score, the higher the degree of anxiety. It was validated with a Spanish population and has a Cronbach's alpha of .89 (Lobo et al., 2002).

2.3.5 Perceived Social Support

Social Support Survey (MOS). It was designed by Sherbourne and Stewart and validated in Colombia by Londoño Arredondo et al. (2012). It consists of 20 questions, in which the first one asks about the size of the social network and the rest are divided into 4 dimensions of functional social support: emotional/informational social support (6 items), instrumental support (4 items), positive social interaction (4 items), and affective support (3 items). Responses are Likert-type from 1 (Never) to 5 (Always). The scale has a Cronbach's Alpha of .94 (Londoño Arredondo et al., 2012).

2.3.6 Happiness

Happiness Scale from Lima adapted to Older Adults. This scale was developed in Latin América by Alarcón in 2006 specifically for the Perú's adult population (Alarcón, 2006) and adapted in 2011 for older adults by Árraga Barrios and Sánchez Villarroel (2012) in the Venezuelan population. It is made up of 14 items and evaluates 4 determining factors in the measurement of the happiness construct in older adults: Positive sense of life (2 items), Satisfaction with life (7 items), Personal fulfillment (3 items) and Joy of living (2 items). The response model is Likert-type, where 5 is totally agree, 4 is agree, 3 is neither agree nor disagree, 2 is disagree, and 1 is totally disagree. This adaptation to older adults has a Cronbach's alpha of .84 (Árraga Barrios & Sánchez Villarroel, 2012).

2.4 Sample design

The type of sampling used was probabilistic, stratified, and randomized, with a 94% confidence and a 6% degree of error. A sample of 248 older adults was calculated. It is important to consider that the database from which the sample was extracted was provided by Túquerres's Sisben² and it was updated to 2019.

2.5 Data collection process

The data was collected in 2020 in two moments: one between February and March, with 130 participants evaluated, and another one from June to July, with 122 evaluated. This, due to the actions taken by the national government due to the COVID-19 pandemic and considering the biosecurity protocols. The two people in charge of data collection were previously trained in the application of the instruments.

2.6 Analysis plan

Sociodemographic characteristics, symptoms, medical history, cognitive performance, functional dependency, depression, anxiety, social support, and level of happiness

²Sisben: Sistema de Identificación de Potenciales Beneficiarios de Programas Sociales [System for the Identification of Potential Beneficiaries of Social Programs], which allows classifying the population according to their living conditions and income. Taken from: <https://www.sisben.gov.co/Paginas/que-es-sisben.aspx>

Table 1

Association between sociodemographic variables and happiness in older adults in the rural area of Túquerres, Nariño

Variable	n = 252	%	Standardized coefficient	CI 95%		Standardized adjusted coefficient*	CI 95%		
				IL	SL		IL	SL	
				Age	–		–	.13	.02
Gender	Female	132	52.4	Ref	–	–	–	–	–
	Male	120	47.6	-.05	-.3	.2	-.09	-.33	1.15
Socioeconomic level	0	32	12.7	-.32	-.7	.05	-.22	-.58	.13
	1	198	78.6	Ref	–	–	–	–	–
	2 and 3	22	8.7	.01	-.43	.45	-.13	-.55	.29
Health affiliation	Subsidized or unaffiliated	231	91.7	Ref	–	–	–	–	–
	Contributory	21	8.3	0.03	-.42	.48	.05	-.37	.48
Marital status	Single	49	19.4	.1	-.23	.43	.23	-.08	.55
	Married or free union	141	56	Ref	–	–	–	–	–
	Divorced	9	3.6	-.16	-.84	.52	.05	-.59	.69
	Widower or widow	53	21	.15	-1.17	.47	.18	-.13	.5
Lives with partner	No	114	45.2	0.07	-.18	.32	.18	-.07	.42
	Yes	138	54.8	Ref	–	–	–	–	–
Level of education	Does not know how to read/write	38	15.1	.06	-.3	.41	.11	-.24	.47
	Incomplete primary	178	70.6	Ref	–	–	–	–	–
	Complete primary	33	13.1	0.18	-.2	.55	.06	-.3	.42
	Complete high school or more	3	1.2	0.49	-.66	1.64	.41	-.68	1.49
Occupation	Employee	20	7.9	-.61	-1.08	-.2	-.42	-.89	.06
	Independent	60	23.8	-.03	-.32	.26	-.12	-.44	.2
	Pensioner	3	1.2	.56	-.58	1.69	.59	-.48	1.67
	Home	169	67.1	Ref	–	–	–	–	–
Economic income	No income	105	41.7	-.17	-.42	.08	-.07	-.35	.21
	With income	147	58.3	Ref	–	–	–	–	–
Family economic dependency	No	94	37.3	-.02	-.27	.24	-.002	-.28	.27
	Yes	158	62.7	Ref	–	–	–	–	–

Note. CI:Confidence interval; IL:Inferior limit; SL:Superior limit. *Adjusted for age, sex, depression, anxiety, and social support.

were described, reporting absolute and relative frequencies for qualitative and median variables, as well as interquartile range for social support.

The association between the level of happiness and sociodemographic characteristics, symptoms, medical history, cognitive performance, functional dependency, depression, anxiety, and social support was explored. The level of happiness was assumed to depend on these characteristics, which was explored using linear regression models. For each characteristic and its relationship with the level of happiness, the raw standardized regression coefficient is presented, adjusted for age, sex, depression, anxiety, and social support.

To assess the magnitude of the relationship, these standardized coefficients were interpreted as standard deviations. Thus, values from 0 to .20, between .20 and less than .50, between .50 and less than .8, and values greater than or equal to .8, indicate null association sizes, small effect, moderate or medium, and large, respectively (Dominguez-Lara, 2018; Fritz et al., 2012). These coefficients are presented with their respective 95% confidence interval. The data was analyzed using Jamovi free software based on R, 1.8.2 version (Jamovi, 2021; R Core Team, 2021).

To improve interpretability, it was necessary to categorize and dichotomize the social support variable, along with its respective dimensions, which was done from each

Table 2
Association happiness and symptoms, medical history, cognitive performance and functional dependency of older adults in the rural area of Túquerres, Nariño

Variable	n = 252	%	Standardized coefficient	CI 95%		Standardized adjusted coefficient*	CI 95%		
				IL	SL		IL	SL	
Health perception	Bad	76	30.3	Ref	-	-	-	-	
	Fair	124	49.4	.06	-.22	.35	-.03	-.32	.25
	Good	51	20.3	0.29	-.06	.65	.08	-.29	.45
History of chronic disease (self-reported)	No	50	19.8	0.6	.3	.9	.42	.12	.73
	Yes	202	80.2	Ref	-	-	-	-	-
Had hospitalization in the past year	No	191	75.8	Ref	-	-	-	-	-
	Yes	61	24.2	-.14	-.43	.15	0	-.27	.29
Memory loss	No	62	24.6	0.12	-.17	.41	-.02	-.31	.26
	Yes	190	75.4	Ref	-	-	-	-	-
Difficulty to sleep	No	96	38.1	0.01	-.25	.26	-.08	-.32	.17
	Yes	156	61.9	Ref	-	-	-	-	-
Having the following symptoms at least once a week	No	130	51.6	Ref	-	-	-	-	-
	Yes	122	48.4	-.34	-.59	-.1	-.2	-.45	.04
Difficulty breathing or taking a breath	No	170	67.5	Ref	-	-	-	-	-
	Yes	82	32.5	-.41	-.67	-.15	-.25	-.51	.02
Feeling tired or weak	No	73	29	.12	-.15	.4	-.02	-.29	.26
	Yes	179	71	Ref	-	-	-	-	-
Discomfort in the joints or back	No	61	24.2	.71	.43	.98	.55	.26	.83
	Yes	191	75.8	Ref	-	-	-	-	-
Cognitive performance	No cognitive impairment	107	42.5	.12	-.13	.37	.09	-.17	.35
	With cognitive impairment	145	57.5	Ref	-	-	-	-	-
Functional dependency	Independent	169	67.1	Ref	-	-	-	-	-
	Dependent	83	32.9	-.1	-.37	.16	-.13	-.43	.17

Note. CI: Confidence interval; IL: Inferior limit; SL: Superior limit. * Adjusted for age, sex, depression, anxiety, and social support.

its medians, and with these it was also possible to perform the analysis, univariate as well as bivariate and multivariate.

3. Results

3.1 Sociodemographic Characterization

Of the 252 records, corresponding to older adults in the rural area of Túquerres, Nariño, 52.40% were women. The minimum age presented was 60 years; the maximum, 91 years for men and 94 years for women; and a median of 72 years for both groups (IQR men 31, IQR women 34). The most frequent marital status, with 56%, was married or free union. Regarding the level of education, 70.60% have not finished primary school. Regarding occupational activity and income, 67.10% work at home, of which 64.5% are women, only 1.20% are pensioners and 41.70% do not have a monthly income. It is also possible to observe in the distribution by socioeconomic level that 78.60% of older adults belong to socioeconomic level 1, which is consistent with the type of affiliation to the health security system, with 91.70% in subsidized regime or without affiliation (Table 1).

3.2 Sociodemographic Characteristics and their Association with the Level of Happiness

Of the sociodemographic characteristics, the variables that were associated with happiness were socioeconomic level ($\beta_a = -.22$; CI95% $-.58 - .13$), level of education ($\beta_a = .41$; CI95% $-.68 - 1.49$), and occupation ($\beta_a = .59$; CI95% $-.48 - 1.67$), as shown in Table 1.

3.3 Characterization of Symptoms and Medical History, Cognitive Performance and Functional Dependence

Of the symptoms and medical history, 79.70% reported a perception of health status between fair and poor, 80.20% had a history of chronic disease and 75.80% did not have admissions to hospitalization in the last year. Additionally, a series of physical symptoms were inquired about, asking the participant if they presented these symptoms at least once a week, which indicated that more than 70% reported memory loss (75.40%), joint or back pain (75.80%), and feeling tired or weak (71%), as shown in Table 2.

Regarding cognitive performance, it was identified that the prevalence of cognitive impairment is 57.50% (CI95% 51.37 – 63.54). On the other hand, 32.90% (CI95% 27.34 – 38.92) of older adults have some level of functional dependence to carry out their daily tasks.

3.4 Association between Symptoms and Medical History, Cognitive Performance, Functional Dependence, and Level of Happiness

In relation to the symptoms and history of illness that were associated with happiness, the presence of chronic illness ($\beta_a = .42$; 95% CI $.12 - .73$), difficulty breathing ($\beta_a = -.25$; 95% CI $-.51 - .02$), and joint pain ($\beta_a = .55$;

95% CI $.26 - .83$) were related. Other variables, such as perceived health, cognitive performance, and functional dependency, did not show a relationship with the level of happiness, with standardized coefficients less than .20 (Table 2).

3.5 Emotional State and Social Support

It was identified, among the population of older adults in the rural area of Túquerres, a prevalence of depressive symptoms, whether moderate or severe, of 42.90% (95% CI 36.85 – 49.03) and 82.90% (95% CI 77.91 – 87.21) in relation to anxiety (Table 3).

In perceived social support, each of its dimensions was analyzed. In the size of the social network, 53.97% have 4 or more people. In emotional/informational social support, 51.19% obtained a score of 31 or more, where the minimum score was 8 and the maximum was 40. In instrumental support, 61.51% obtained a score of 20, with a minimum of 4 and a maximum of 20. In positive social interaction, that is, the availability of individuals to count on to do fun things, 62.70% obtained a score of 16 or more, with minimum values of 4 and maximum of 20. In affective support, 52.78% obtained scores of 13 or more. For total social support, a median score of 76.5 was recorded, with minimum scores of 19 and maximum of 95. 93.70% of the population reported having a caregiver when they were sick and there were no differences in the average score of happiness.

3.6 Association between Emotional State, Social Support and the Level of Happiness

For the mood variables, adjustment was made for age, sex, social support, and depression or anxiety, depending on the variable to be adjusted. An association was found with the level of happiness for both depression ($\beta_a = -.21$; 95% CI $-.48 - .06$) and anxiety ($\beta_a = .40$; 95% CI $.72 - .07$). In the case of social support, after adjusting for age, sex, depression, and anxiety, there was no association with the level of happiness ($\beta_a = .18$; CI95% $.50 - .31$).

4. Discussion

This research sought to explore happiness in a vulnerable population that demands more and more attention, older adults living in rural areas, since the world population has been aging and will increase its proportion to 22% by 2050 (Organización Mundial de la Salud [World Health Organization], 2017). In this sense, it is essential to know the factors that may be related at this stage of life with healthy aging, subjective well-being, full satisfaction and that, in addition, can provide sufficient data to support decision-making in health care and social protection, either for damage mitigation or prevention in future generations. Thus, the main objective of this study was to explore the association between level of happiness and sociodemographic characteristics, medical history and symptoms, emotional state, social

Table 3

Association between depression, anxiety, and happiness in older adults in the rural area of Túquerres, Nariño

Variable	n = 252	%	Standardized coefficient	CI 95%		Standardized adjusted coefficient*	CI 95%		
				IL	SL		IL	SL	
Depression	Without symptoms of depression	144	57.14	Ref	-	-	-	-	-
	With symptoms of depression	108	42.86	-.36	-.6	-.11	-.21*	-.48	.06
Anxiety	Mild	43	17.06	.62	.94	.3	.4**	.72	.07
	Moderate or severe	209	82.94	Ref	-	-	-	-	-

Note. CI:Confidence interval; IL:Inferior limit; SL:Superior limit. *Adjusted for age, sex, depression. **Adjusted for age, sex, depression.

Table 4

Association between depression, anxiety, and happiness in older adults in the rural area of Túquerres, Nariño

Variable	MOS		Standardized coefficient	CI 95%		Standardized adjusted coefficient*	CI 95%			
	Me	ICR		IL	SL		IL	SL		
Perceived social support	Social network size	4	4.25	-	.18	.05	.30	.10	-.03	.22
	Emotional/Informational social support	31	16.25	-	.25	.13	.37	.14	.01	.27
	Instrumental support	20	4	-	.18	.06	.30	.11	-.01	.23
	Positive social interaction	16	8	-	.21	.09	.33	.11	-.02	.24
	Affective support	13	5	-	.17	.05	.30	.11	-.01	.23
	MOS Total	76.5	25.3	-	.29	.17	.40	.18	.50	.31
Having a caregiver when sick	-	-	No	-.36	-.87	.15	.11	-.42	.63	
	-	-	Yes	Ref	-	-	-	-	-	

Note. CI:Confidence interval; IL:Inferior limit; SL:Superior limit; MOS:Social support survey MOS; Me:Median; ICR:Interquartile range. *Adjusted for age, sex, depression, and anxiety.

support, cognitive performance, and functional dependence in this population.

In general, old adults from the municipality of Túquerres rural area have precarious socioeconomic conditions, where the level is mainly low, since 78.6% of the participants are at level 1. When levels 0 and 1 are compared with respect to happiness, it is possible to identify that the lower the socioeconomic level, the lower the happiness, although, as shown in the results section, the effect is small. It is worth noting that these results ratify one of the findings of the Encuesta Nacional de Demografía y Salud [National Demographic and Health Survey] carried out in 2015, in which it was clear that there was a “detriment of rural areas, where the lowest quintiles of wealth are found and that they are the least developed territories” (Profamilia & Ministerio de Salud y Protección Social, 2015, p. 38). These figures constitute a warning to take serious actions into the perpetuation of less favorable socioeconomic condi-

tions that are affecting the health of its inhabitants, in this case, the elderly of Túquerres.

Although there are not many studies on well-being in rural older adults in Latin America, there are two studies that stand out. One, by Lobos et al. (2016) in a group of rural older adults in Chile, in which they did not find an association between socioeconomic level and happiness, but did identify that older adults reported greater happiness at older ages, although with a limit of 73 years, which suggests that, in their study population, happiness begins to decline after that age. However, in the present study no association was found between age and level of happiness. The second study, conducted by Alvarado San Román et al. (2017) sought to identify the factors associated with subjective well-being, which they defined as “the evaluations that people make of their own lives, for example satisfaction with life, which are based on feelings” (p. 2), finding that satisfaction with life, regarding the Chilean older adults with whom they

worked, was greater as age increased, but they clarify that this result must go hand in hand with the analysis of the income level of the participants.

Although no effect was found between the level of income and the level of happiness, this variable has reported effect in other studies. In addition to the one mentioned by Alvarado San Román et al. (2017), Amorim et al. (2017) carried out a study in Brazil, in which they compared the level of happiness of older adults who lived in rural areas with those who lived in urban areas, finding that one of the factors that predicted the level of happiness was the economic situation, as well as health and social support. Additionally, a study carried out in Portugal, which sought to identify the predictive and explanatory variables of self-perceived health and happiness, reported that gender and age were factors that influenced the level of happiness, but the greatest effect was exerted by income, that is, the lower the income, the lower the perceived happiness (Silva, 2014). In the United States, it was reported that the inhabitants of rural areas, especially older adults, are under less favorable economic and health conditions and that this impacts their emotional well-being, but it is not an exclusive case in this country, as it has also been reported in other countries such as Canada (Henning-Smith, 2020; Varin et al., 2020).

Regarding the type of occupation, it was found that the participants with a pension presented a higher level of happiness than those who were dedicated to the home, while when comparing the latter with those who had a job, greater happiness was observed among those who were dedicated to housework, these being carried out mostly by women (64.5%). Given these findings, it is worth noting that only 1.20% of the participants were pensioners, while the general percentage of older adults who are pensioners in the country, for rural areas, is 7% (Oficina Internacional del Trabajo, n.d.). This should draw attention at the state level in order to guarantee health rights and social protection, considering this occurs despite the fact that in Colombian legislation the pension age is set at 57 years for women and 62 years for men (Colpensiones, n.d.).

These figures have a background of inequity, since although life expectancy has increased, as proposed by Arrubla Sánchez (2010), “it is not enough to live longer, it is necessary to live old age with quality” (p. 231), and this old age is the reflection of social, economic, cultural and political conditions of each society, of government decisions, and of how aging is seen, that is, if it is from a *fatalistic* notion, in which it is considered a problem that contributes to the slowdown of progress and the pressure on the health and social security system, or if it is seen from the notion of *democratization of aging*, in which it is recognized that older adults have made their contribution to society and it is necessary to work for the guarantee of their human rights, their independence

and their autonomy, which inevitably implies considering the unequal access and possession of resources (Arrubla Sánchez, 2010). Although the concept of democratization of aging is not very widespread, the concept of healthy aging has made visible the influence socioeconomic inequities, educational level, and income have on aging (Wagg et al., 2021), which goes from hand in hand with the current World Health Organization calls for the Decade of Healthy Aging 2020–2030 (2020).

The pension issue is something that has been worrying governments, given that the world population is gradually aging, and this requires actions to promote healthy aging conditions. In countries like Brazil, China or Australia, where this issue is becoming more visible, studies have been carried out in which the influence of retirement on the well-being of rural older adults has been identified, finding that retirement implies stable income and a decrease in stressors, an aspect that impacts their perception of well-being and satisfaction with life. Nevertheless, it is not presented in the same way in men and women, since the latter only access retirement when they are heads of household, especially in the case of Latin America, which reflects the existing inequality gap in the conditions of access to retirement in the rural population (Handley et al., 2021; Ko & Möhring, 2021; Oliveira & Coelho, 2021).

Regarding the educational level, 70.60% of the participants had not completed primary school, which also had an effect on happiness, since those who were in the second group reported greater happiness than those who had not finished primary school. Regarding that, in the study carried out in Chile by Alvarado San Román et al. (2017), it was found that older adults with higher education were the ones who reported the greatest life satisfaction.

In relation to the characteristics and health symptoms, although not enough evidence was found to establish an association between the perception of the state of health and happiness, it is important to point out that 79.70% have a perception of their health between poor and regular. In addition, 80.2% of the older adults who participated in this study have a history of chronic disease. Regarding happiness, those who do not report such a history of chronic disease present a higher level, although the effect size is small. The same occurs, with a moderate effect, with the variable referring to presenting pain in the joints at least once a week. When contrasting these results with other studies that sought to analyze the state of health and happiness, a meta-analysis carried out in 2017 stands out, in which they were seeking to establish the association of health state with subjective well-being, defining it as happiness and satisfaction with life, and reported that the association between health status and subjective well-being was positive and with a moderate effect. This indicates that the better the perceived the state of health, the greater the subjective well-being (Ngamaba et al., 2017). Fur-

thermore, they identified that the association between health status and happiness is much stronger in low- and middle-income countries, compared to high-income countries (Ngamaba et al., 2017).

Miret et al. (2017) analyzed the association between evaluated and experienced well-being with health in nine countries of different income levels. The authors defined evaluative well-being as how satisfied people are with their lives and experienced well-being as the positive and negative emotions people experience day after day. Considering this, they found that the evaluated well-being, that is, satisfaction with life and health, are related and this relationship was similar in the nine countries the study was carried out, which can also be identified in other studies (Amorim et al., 2017; Lobos et al., 2016; Steptoe et al., 2015). As can be seen, the difference in the results of the previous studies does not lie in whether or not there is an association between the state of health and happiness, but rather in the strength of this association depending on the country in which the study is carried out. It is worth asking from this, what makes this association strong in places with lower incomes? Is care and access to health services more difficult, more expensive? These types of findings recall the multicausality of a complex phenomenon, such as happiness or subjective well-being, and that it can also be a bidirectional relationship, since the state of happiness in turn can favor health-disease processes (Steptoe et al., 2015).

Regarding the emotional state, depression had a prevalence of 42.9% and showed a small effect on happiness; in the case of anxiety, the prevalence of moderate to severe symptoms was 82.9%, likewise, with a small effect. These results are in line with those reported on depression in the Encuesta de Salud, Bienestar y Envejecimiento de Colombia [Colombian Health, Well-being and Aging Survey], carried out in 2016, in which they reported a prevalence of 41%, although they did not provide data on anxiety (Ministerio de Salud y Protección Social, 2015). In Colombia, the study of depression in older adults has been gaining value, since suicide attempts in this population can be 4 times more effective than in young people (Gómez-Restrepo et al., 2013), which has made that the interest in the study of happiness has not been only perceived as an outcome, but as a mediator or an additional exposure to variables such as depression or social support (Gómez-Restrepo et al., 2013; Ramírez Arango et al., 2020; Segura-Cardona et al., 2015).

Another element that reveals this situation is the approach to subjective well-being in public health and mental health in a rural context, since in a country with highly vulnerable populations, victims of violence and inequity, the emphasis is on addressing the disease and not on the potentialities or positive qualities that help maintain states of well-being. However, this association has been reviewed elsewhere, although not always in a unique and isolated way, but in relation to other vari-

ables, such as cognitive performance and functional dependence, which, in the present study, did not provide enough evidence to affirm that they have an association with happiness.

Concerning the previous statements, a study conducted in Singapore by Hui Tan et al. (2019) evaluated the mediating role of depression, physical disability, the frequency of social contact and loneliness, in the relationship between cognitive impairment and happiness, finding that this relationship was totally mediated by these variables, so the interventions to improve happiness levels should focus on depression, physical disability, and loneliness, from a comprehensive and multi-causal approach. In Spain, Rodríguez et al. found that cognitive performance had a negative relationship with functional dependency, and, in turn, these factors had a positive correlation with symptoms of depression and anxiety, but not with life satisfaction (2014). No evidence was found in the previous study of a direct relationship between cognitive performance and happiness, nor between functional dependence and happiness. However, it does show a relationship with other mental phenomena of primary approach such as depression and anxiety, which continues to point out the importance of addressing mental and emotional phenomena as multi-causal. Similar results were found in a study in Korea, in which social activity was found to influence life satisfaction with cognitive function as the mediating variable (Bae & Kim, 2021).

Specifically, regarding social support, it was initially expected that this variable would present an association with happiness, considering reviewed studies such as the one conducted by Amorim et al. (2017), social support was one of the main predictors of happiness, along with health and economic status. Ann W. Nguyen et al. conducted a study with African-American older adults, focusing on social support, its dimensions, and subjective well-being, finding that there is a positive association between subjective closeness to family with life satisfaction. In addition, when there is no subjective closeness, life satisfaction increases if there is more family contact (Nguyen et al, 2016). Similarly, in other cultures such as China, it has been found that trust and family support are positively associated with life satisfaction (Pan, 2018). Based on this, the findings of the present study should be contrasted with future investigations, which could have larger samples that increase the inferential power of statistical analyses.

4.1 Limitations

One of the important limitations was the fact that some variables were not considered, which would have facilitated a more structural analysis of happiness in older adults. Especially, not having been able to access the information corresponding to the regional indigenous council and spiritual or religious practices, which can

have an important weight when analyzing happiness or subjective well-being, according to the specific context. In addition, the regional indigenous council variable could have been considered as a proxy for ethnicity, which is relevant for addressing constructs that are influenced by the social determinants of health.

Another limitation involved in working with secondary data is the sample size, which can be seen in the very wide confidence intervals, which puts at risk a type II error, that is, the sample did not have enough power to declare associations that probably existed, and there may be an increased probability of false positive findings, since in small samples, when analyzing multiple variables and their association with the outcome, that probability is increased, and for this reason it is important to take the findings with exploratory purposes.

On the other hand, given the scarce data about the association between anxiety and happiness and the high prevalence of these symptoms among the participants, it is worth asking whether the fact of having carried out the data collection during the beginning of the COVID-19 pandemic may have influenced or biased these results. As the instrument used measures the symptoms of general anxiety, it does not focus on trait anxiety, this being important to really analyze the presence of anxiety in this population, since it evaluates anxiety as an element of personality, relatively stable, unlike state anxiety, which tends to be modifiable and circumstantial (Forrest et al., 2021).

One of the main limitations when studying this type of constructs is the definition and measurement, since there are multiple definitions that can be adopted as well as the instruments that can be used, which is also due to its recent boom in research, at least in the Latin American population.

5. Conclusions

The present study sought to contribute to the knowledge of happiness in rural older adults, in an area of Colombia in which this type of phenomenon had not been addressed, and less so in this population. This knowledge is expected to contribute to government decision-making, in terms of health as well as social protection, as it highlights the need to approach the social determinants of health to improve the mental health conditions of the population.

Another of the strengths of the research was being able to address such a complex phenomenon, based on a multidimensional evaluation, which highlights the needs of this vulnerable population in this specific area of Colombia.

Happiness is a multicausal variable, a psychological dimension resulting from social, economic, emotional, and biological characteristics, which requires attention if working work for healthy and quality aging is the desire.

At the level of mental health in rural areas, espe-

cially in older adults, there is a significant research gap, an absence of instruments and methodologies designed specifically for them, which require attention and a multidimensional and focused approach. For this reason, a dialogue between knowledge, in this case areas of mental health and public health, and the population is important, thus facilitating a more effective approach that considers the sociocultural and idiosyncratic characteristics, which will help reduce the barriers of access and care in these areas of the country.

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