

DOI: <https://doi.org/10.36489/saudecoletiva.2021v11i63p5508-5519>

# Prevalence of chronic non-communicable diseases in long-term elderly people in a municipality inside Amazonas

Prevalencia de enfermedades crónicas no transmisibles en personas mayores de larga duración en un municipio dentro de las Amazonas

Prevalência de doenças crônicas não transmissíveis em idosos longevos em um município no interior do Amazonas

## ABSTRACT

**Objective:** To identify the prevalence of self-reported chronic non-communicable diseases (NCDs) in long-lived elderly, and outline their sociodemographic profile. **Method:** A descriptive, cross-sectional study with a quantitative approach, carried out with 135 long-lived elderly people, of both sexes, registered in 12 Basic Health Units in the municipality of Coari, in the interior of Amazonas, Brazil. The information was collected using a structured form, at the elderly's home, from December 2019 to February 2020. The data were analyzed using the IBM SPSS Statistics software. **Results:** Among the 135 elderly, the average age was 85.8 (SD = ± 5), predominantly female (61.5%), with low education (56.3%). The prevalence of NCDs in the studied population was 85.9% elderly, with systemic arterial hypertension (SAH) being the most frequent comorbidity in both sexes. **Conclusion:** The presence of chronic diseases, with prevalence of SAH, was found in both sexes.

**DESCRIPTORS:** Elderly 80 Years or Older. Chronic diseases. Primary Health Care.

## RESUMEN

**Objetivo:** Identificar la prevalencia de enfermedades crónicas no transmisibles (ENT) auto notificadas en ancianos longevos y de-linear su perfil sociodemográfico. **Método:** Estudio descriptivo, transversal con abordaje cuantitativo, realizado con 135 ancianos longevos, de ambos sexos, registrados en 12 Unidades Básicas de Salud del municipio de Coari, en el interior de Amazonas, Brasil. La información se recopiló mediante un formulario estructurado, en el domicilio de la tercera edad, desde diciembre de 2019 hasta febrero de 2020. Los datos se analizaron mediante el software IBM SPSS Statistics. **Resultados:** Entre los 135 ancianos, la edad promedio fue de 85,8 (DE = ± 5), predominantemente mujeres (61,5%), con baja escolaridad (56,3%). La prevalencia de ENT en la población estudiada fue del 85,9% ancianos, siendo la hipertensión arterial sistémica (HAS) la comorbilidad más frecuente en ambos sexos. **Conclusión:** La presencia de enfermedades crónicas, con prevalencia de HAS, se encontró en ambos sexos.

**DESCRIPTORES:** Anciano de 80 años o más. Enfermedades crónicas. Atención Primaria de Salud.

## RESUMO

**Objetivo:** Identificar a prevalência de doenças crônicas não transmissíveis (DCNT) autorreferidas em idosos longevos e traçar seu perfil sociodemográfico. **Método:** Estudo descritivo, transversal e de abordagem quantitativa, realizado com 135 idosos longevos, de ambos os sexos, cadastrados em 12 Unidades Básicas de Saúde do município de Coari, interior do Amazonas, Brasil. A coleta das informações ocorreu por meio de formulário estruturado, no domicílio do idoso, no período de dezembro de 2019 a fevereiro de 2020. Os dados foram analisados com o auxílio do software IBM SPSS Statistics. **Resultados:** Dentre os 135 idosos, a média de idade foi de 85,8 (dp=±5), predominância do sexo feminino (61,5%), com baixa escolaridade (56,3%). A prevalência de DCNT na população estudada foi de 85,9% idosos, sendo a hipertensão arterial sistêmica (HAS) a comorbidade mais frequente em ambos os sexos. **Conclusão:** Constatou-se a presença de doenças crônicas, com prevalência de HAS, em ambos os sexos.

**DESCRIPTORES:** Idoso de 80 Anos ou Mais. Doenças Crônicas. Atenção Primária de Saúde.

RECEIVED ON: 12/16/2020 APPROVED ON: 01/11/2021



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**INTRODUCTION**

**T**he aging process with the changes it brings to the body of each individual must be understood and appreciated as a part of the natural process of human development. This process is inherent to every individual, and every day each of us ages a little more, so it is crucial that throughout this process, healthy attitudes are taken so that they can influence a better quality of life in old age.<sup>1</sup>

The presence of scarce demand for health services in the early stages of a disease and low adherence to treatment are generally associated with countries that have a lower socioeconomic structure and a low level of education.<sup>2</sup> In the elderly population specifically, the prevalence of Chronic Noncommunicable Disease (CNCD) is commonly observed as a relevant factor for the development of physical disability, especially when not properly treated.<sup>3</sup>

Among the most prevalent CNCDs in the elderly, cardiovascular diseases, cancer, chronic respiratory diseases and diabetes mellitus have great prominence. These diseases are often related to risk factors such as: smoking, alcohol, family history, physical inactivity, non-healthy food and obesity.<sup>2,4</sup> Depression has also become an increasingly common disease

among the elderly, especially women, and is generally associated with cardiovascular and cerebrovascular comorbidities.<sup>5</sup>

In review, Melo et al.<sup>6</sup> point to an increasing frequency of multiple chronic diseases in the elderly, highlighting that

**The aging process with the changes it brings to the body of each individual must be understood and appreciated as a part of the natural process of human development.**

this reality has become a very common condition, reaching from 30,7% to 57,0% of the cases of CNCDs in the elderly, being usually influenced by socioeconomic factors, demographics, lifestyle and family structure. Concomitantly, elderly people with multimorbidity tend to go through a greater number of hospitalizations, which can influence a negative self-perception of health, in addition to the need to consume a variety of medications that can consequently increase the development of adverse effects.<sup>7</sup>

Within the preventive model, primary health care functions as an essential tool not only for the prevention of chronic diseases, but also for maintaining functional capacity, since it has mastery over the most effective strategies for preventing health problems in the elderly that lead to loss of functional capacity.<sup>3</sup> Thus, the need for interventions from other areas is emphasized, not only health, in the development of comprehensive actions and policies to improve the process of caring for the elderly, as the relationship with the health services is complex and capable of reflect issues that negatively impact the quality of life of this population and of society as a whole.<sup>8</sup>

The relevance of the theme of the present study comes from making it possible to identify the prevalence of NCDs for the construction and characterization of

a profile of the elderly who suffer from these comorbidities, and also to support the formulation of health policies aimed at preventing these diseases, and thus encouraging basic health units (UBS) to carry out activities that inform and raise awareness among the population about risk factors and the importance of preventing them as early as possible, aiming at reducing comorbidities.<sup>4</sup>

This study aimed to identify the prevalence of self-reported NCDs in the long-lived elderly in the municipality of Coari in the state of Amazonas. Therefore, the following question emerges: What is the prevalence of chronic non-communicable disease in long-lived elderly?

## METHOD

This is a descriptive study, with a cross-sectional design with a quantitative approach. This research is part of a larger project entitled "Health of the long-lived elderly: functional capacity and chronic non-communicable disease", carried out in the urban area of a municipality in the interior of Amazonas, Brazil.

The study site is a municipality in the Middle Solimões region called Coari in the State of Amazonas, with an estimated population of 75.965 inhabitants from the last demographic census in 2010.<sup>9</sup>

The selection of participants for the present study was based on data from the Secretary of Health of the municipality of Coari, which provided the number of elderly people aged 80 or over registered in all Basic Health Units (UBS), which corresponded to 557 individuals. From these data, the sample calculation was performed using the formula for the infinite population, in which initially obtained 228 elderly people for the sample. A 95% confidence level and a 0,05% margin of error were considered. In the search for documentary data made available by each UBS, it was found that 227 long-lived elderly people were monitored in the area covered by the 12 UBS and that there were 42 deaths, resulting in a total of 185. Thus, the final sample cor-

responded to 135 long-lived elderly and 50 losses (refusal to participate in the study, elderly people not found at home, changes of address or city).

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The participants included in the study were visited at their homes, where they were duly informed about the research, confirming their participation by signing the informed consent form, and the information provided to the researchers

through a structured form. This instrument addressed information of interest for the study, such as: demographic variables (age and sex), socioeconomic (marital status, education, personal and family income, religion, current occupation), household (regarding people in the household, who lives in it), health condition (comorbidities). Subsequently, the collected data were analyzed and presented using the usual techniques employed in a descriptive study, for categorical variables, based on absolute and percentage frequencies; and mean, standard deviation, minimum and maximum for numerics. Fisher's exact test and chi-square test were applied for the association.

This project is approved by the Research Ethics Committee (CEP) of the Federal University of Amazonas (UFAM) nº CAAE 20056119.0.0000.5020. This investigation is in compliance with resolution 466/12 of the National Health Council.

## RESULTS AND DISCUSSION

135 long-lived elderly participated in the study, with an average age of 85,8 (SD = ± 5), with a minimum of 80 maximum of 102 years. Of these, the predominant age group (79,3%) ranged between 80 and 89 years, with the majority of the el-

Table 1. Characterization of demographic and socioeconomic variables of the oldest old (N = 135). Coari, AM, 2020.

VARIABLES	N(%)	MEAN (STANDARD DEVIATION)
<b>Age range</b>		
80-89	107 (79,3)	
90-99	26 (19,3)	85,8 (±5,0)
≥ 100	2 (1,4)	
<b>Sex</b>		
Female	83 (61,5)	
Male	52 (38,5)	
<b>Education*</b>		
0	76 (56,3)	
1-4	34 (25,2)	1,9 (±2,5)
≥ 5	25 (18,5)	
<b>Religion</b>		

Catholic	94 (69,6)	
Protestant	39 (28,9)	
Without religion	2 (1,5)	
<b>Marital status</b>		
Single	22 (16,3)	
Married	42 (31,1)	
Widow	71 (52,6)	
<b>Individual Income**</b>		
0-2	112 (83,0)	1,2 (±0,4)
>2	23(17,0)	
<b>Family income**</b>		
1-2	118 (87,4)	
3-4	16 (11,9)	1,8 (±0,8)
≥5	1 (0,7)	

Note: \* Years of study; \*\* Minimum wage in force in 2020.

derly (61,5%) being female, according to the data presented in Table 1.

The results are similar to the studies carried out as the elderly in cities in the interior of Rio Grande do Sul and in the capital of Pará, which highlighted the predominance of the female gender among participants, corroborating with the finding of most national<sup>10-13</sup> and international<sup>14,15</sup> studies. With regard to this aspect, it should be noted that this phenomenon of the feminization of old age, evident on a global scale, is generally

related to a high prevalence of mortality among men and a visible greater concern among women with self-care in health, which can explain the greater female gender longevity.<sup>16</sup>

Low education and income among participants represented expressive results, in which illiteracy (56,3%) was present in more than half of the cases, in which at least 87,4% have a family income of one to two minimum wages. Taking into account that 82,2% of these elderly people reported living with 1 to

5 people, and presenting a low per capita family income. These results, although discreetly corroborate with another analysis carried out in Campina Grande-PB, whose data concerning education reveal that 39,2% of the elderly surveyed have low education levels, between 1 to 4 years of study. Regarding the socioeconomic aspect, the same study showed that at least 3/4 of the elderly receive only a minimum wage.<sup>16</sup>

It is important to note that the existence of the discreet diversity of educational level evident between the studies must be considered, as coming from the socioeconomic inequalities present in the different Brazilian regions, which possibly provide greater difficulty in obtaining the opportunity to access education. Generally, the level of education is fundamental for the good social, political and economic development of every citizen, however, when it is not properly established it can influence in various situations, including health, thus predisposing this profile of the elderly to having less chances to have access to quality health care and to have few financial conditions, causing a greater probability of health problems.<sup>17,18</sup>

As for religion, the majority of the elderly self-reported being Catholic (69,3%). According to the IBGE<sup>9</sup> the majority of the Brazilian population is Christian and has Catholic affiliation. Religion for the elderly can contribute to support coping and overcoming daily life, losses and mourning, in addition to providing security and spiritual comfort.<sup>19</sup>

Regarding the marital situation, the participants in this research were widowed (52,6%), corroborating the studies of Fernandes et al.<sup>11</sup> and Mendonça et al.<sup>13</sup> who also had a higher frequency of widowed elderly people.

The prevalence of NCDs in the studied population was 116 (85,9%) elderly people affected by a variety of 14 chronic comorbidities. It was evident that 14% of the elderly reported not having any morbidity.

Chart 1. Distribution of self-reported morbidity in relation to sex of long-lived elderly (N= 135). Coari, AM, 2020.

MORBIDITY	FEMALE	MALE
	N(%)	N(%)
Systemic Arterial Hypertension	60 (72,3)	34 (65,4)
Back pain	23 (27,7)	18 (34,6)
Rheumatoid arthritis	19 (22,9)	13 (25,0)
Diabetes Mellitus	18 (21,7)	6 (11,5)
Chronic gastritis	14 (16,9)	5 (9,6)
Osteoporosis	15 (18,1)	2 (3,8)
Insanity	10 (12,0)	6 (11,5)
Alzheimer's	3 (3,6)	1 (1,9)
Congestive heart failure	1 (1,2)	3 (5,8)
Parkinson's disease	1 (1,2)	2 (3,8)
*Others	3 (3,2)	2 (3,8)

\*Others: neoplasia, chronic kidney disease, asthma and depressive disorder.

Table 1 shows the distribution of NCDs in relation to sex, approximately 88% of the female sex has some chronic disease, while in males this figure represents 82,7% of the cases. Among the self-reported diseases by the elderly, we can highlight SAH (69,6%), back pain (30,4%), rheumatoid arthritis (23,7%) and diabetes mellitus (17,8%).

Silva and Tomaz<sup>16</sup> find results in their research, in which they identified a prevalence of SAH (60,8%), diabetes mellitus (28,3%), rheumatic (22,5%) and cardiovascular diseases (15,1%); under this assumption, the research also points out

that the specific incidence of these diseases is related to the aging process of the current scenario, in which there is a greater global trend towards the development of chronic non-communicable degenerative comorbidities to the detriment of infectious diseases.

Regarding the particularity of the predominance in this study of some comorbidities related to the skeletal system, we can infer that these results are related to the work activities performed by the elderly throughout their lives, in the Amazon region working with agriculture and fishing is part of

a cultural heritage, being activities that require enormous physical effort, often up to the limits of the body.

A study carried out in a city in the interior of Bahia showed seven comorbidities reported by the elderly, which were: depression, diabetes, heart disease, kidney disease, cancer and systemic arterial hypertension, with hypertension and diabetes having the highest index among all.<sup>20</sup> In a municipality in Porto Alegre (RS), a survey<sup>9</sup> surveyed chronic self-reported diseases and their association with symptoms of depression, found that a high prevalence of NCDs (81,3%) among participants, especially of diseases such as SAH (70,8%) and DM (27,0%), and later cardiovascular disorders.

Regarding the analysis of the association between self-reported morbidity and sex of long-lived elderly people is shown in Table 2. It was found that there was a statistical association between osteoporosis morbidity and sex.

It is important to mention that there are still few studies with long-lived people in Brazil, specifically in the North. Which makes the findings of the research important. It is hoped that new scientific investigations can be developed with the deepening of the theme about NCDs in a long-lived elderly in the Amazon context, in addition to filling a research gap in this scenario.

Regarding the limitations of the study, it is considered that the research design does not allow inferring a causal relationship and effect between the variables studied. Another question of possible research feasibility is the study participant's own memory, which due to the natural aging process may be impaired.

## CONCLUSION

The study made it possible to identify the most prevalent self-reported Chronic Noncommunicable Diseases, finding that SAH, spinal diseases, rheumatoid arthritis and Diabetes Mellitus have a higher incidence in the studied long-lived elderly. As well as to characterize the so-

Table 2. Association between self-reported morbidity and sex of the oldest old (N = 135). Coari, AM, 2020.

MORBIDITY	FEMALE N(%)	MALE N(%)	p*
<b>Systemic Arterial Hypertension</b>			
Yes	23(27,7)	34(65,4)	0,396
Sim	60(72,3)	18(34,6)	
<b>Spine Disease</b>			
No	60(72,3)	34(65,4)	0,396
Yes	23(27,7)	18(34,6)	
<b>Rheumatoid arthritis</b>			
No	64(77,1)	39(75,0)	0,779
Yes	19(22,9)	13(25,0)	
<b>Diabetes Mellitus</b>			
No	65(78,3)	46(88,5)	0,133
Yes	18(21,7)	6(11,5)	
<b>Osteoporosis</b>			
No	68(81,9)	50(96,2)	0,015**
Yes	15(18,1)	2(3,8)	
<b>Insanity</b>			
No	73(88,0)	46(88,5)	0,929
Yes	10(12,0)	6(11,5)	
<b>Alzheimer's</b>			
No	80(96,4)	51(98,1)	0,573**
Yes	3(3,6)	1(1,9)	
<b>Chronic gastritis</b>			
No	14(16,8)	47(90,4)	0,238
Yes	14(16,8)	5(9,6)	

Note: \* Chi-square test; \*\* Fisher's exact test.

ciodemographic profile of elderly people enrolled in health units, most of whom have an average age of 85,8 years, being

women, widows, illiterate and retired. In this way, the results contribute in a purposeful way to support planning of Inter-

ventions strategy for the Family Health Strategy team, mainly in the promotion and prevention of long-lived elderly. ■

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