

Health Demands Characteristics and Quality of Life in the Elderly Monitored in the Primary Care

ORIGINAL

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Abstract

Background: To characterize the demands of health and quality of life of elderly people monitored in the primary care of Rio Grande do Norte/Brazil.

Methods and Findings: This is a descriptive, cross-sectional study of a quantitative approach with elderly patients monitored by the primary care. The sample was given for convenience, obtaining 120 participants. The research was conducted through an interview with the application of the following questionnaires: Mini Mental State Examination, Socio-demographic Data and Pain Characteristics, Short-Form-36, Mini Nutritional Assessment, the primary activities of daily living, the instrumental activities of daily living, Prism 7 and the Geriatric Depression Scale. Data analysis was performed using the SPSS statistical program, in which descriptive and association tests were used.

Results: The main demands were related to functionality, followed by nutritional and geriatric depression. The quality of life presented worse results in the domain of general health status and better scores in the emotional and mental health aspects. Regarding the dimensions, the physical health obtained a worse score.

Conclusion: Based on the found characterization of the health demands, it is suggested to perform other studies with the same population, enabling to plan and implementing a multidimensional intervention and improving the quality of life of the elderly people.

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Introduction

The world population is aging, and the new possibilities are fully correlated with the quality of health according to longevity, in the perspective of that it will be satisfactory to get old with low physical and mental limitations, preventing personal consequences and society [1].

In this perspective, the elderly patients affected by chronic diseases and multimorbidity are the patients who demand the highest health cost [2]. A recent study indicated an incidence of 6 or more chronic diseases (totaling 4.3 million people) in 28 million elderly people using the service in the USA (Medicare FFS), with a total spending of US\$ 126.1 billion nationwide [3].

The demands show the need to recognize the elderly of their real health conditions and in this sense, seek to prevent morbidities and complications, recognizing their health needs [4]. Thus, it must be considered the problems that exist in this phase of life with a holistic view that encompasses the biopsychosocial dimensions, including the influence of broader issues on health and self-management [5].

The aging process occurs through physiological and motor changes that occur in the body, with relative consistency for the onset of chronic diseases, as well as functional and cognitive decline, and the onset of depression [6-7]. This shows the repercussions not only on functionality, mobility, and autonomy but also on health-related quality of life, understood by several domains that have important implications for the evaluation of the effects of therapeutic interventions [6, 8-9].

In this sense, care is directed to the elderly population, evidencing the fact that it is often associated with significant cognitive and sensorial comorbidities [10]. One example is the chronic pain as an important indicator of physical and mental health that shows independent and significant effects on the quality of life, and may also be linked to the increased risk of psychological disorders, such as depression [11-13].

Also, malnutrition or overweight are cases faced by the elderly population, starting from the fact that the nutritional status is directly related to the modifications of the aging process [14]. This fact can be associated with the emergence of chronic diseases, such as the reduction of the functional capacity and the appearance of other affections [15-16].

Therefore, due to all the demands and transformations coming from the aging process, there is the greater need for the development of appropriate projects and interventions that ensure these individuals a better quality of life and, consequently, greater independence [17].

In this sense, the study aims to characterize the demands of health and quality of life of the elderly monitored in the primary care of Rio Grande do Norte/Brazil.

Methods

This is a descriptive, cross-sectional study with a quantitative approach aiming to characterize the health demands and quality of life of the elderly in the Primary Care. This study is linked to the project of the Foundation for Advancement of International Medical Education and Research (FAIMER) called "Healthcare of the Elderly: A proposal for evaluation and multidimensional intervention."

The participants of the research are the elderly enrolled in the Primary Units in Rio Grande do Norte (Brazil). In this study, a person aged 60 or over will be considered an elderly person, according to the World Health Organization, which defines that in those developing countries, who is in this age group is within such classification [18]. The sample was for convenience and had a total of 120 elderly.

The data collection was conducted by undergraduate, and graduate students of the Federal University of Rio Grande do Norte (UFRN), after undergoing a training of the instruments to be used. This collection occurred from December 2015 to March 2016.

As inclusion criteria, the elderly should be enrolled in the Family Health Strategy (FHS) and have cognitive conditions to answer the questionnaires applied. This data was measured through the Mini-Mental State Examination (MMSE) questionnaire. People less than sixty years old were excluded.

The research was performed through the application of the MMSE [19], Socio-demographic and Pain Characteristics, Short-Form-36 (SF-36), validated Brazilian version [20], the Mini Nutritional Assessment (MAN) [21], the questionnaire on primary activities of daily living (ABVD) developed by Barthel [22], the daily instrumental activities activity (AIVD) developed by Lawton and Brody and adapted to the Brazilian context [23], Prisma 7 [24] and the Geriatric Depression Scale (GDS) [25].

The MMSE contemplates questions related to cognition, temporal and spatial orientation, attention, memory, language and mathematical reasoning, in which it has the purpose of tracking cognitive impairment. Their score can vary from zero to 35 points, being the cut-off point for illiterate or low-educated people, 17 points, and 24 points for the general [19].

The questionnaire with Socio-demographic Data and Pain Characteristics contained closed questions that encompassed the variables age, gender, education, family income, marital status, current work situation, during the day, pain in the last week, time that felt pain, intensity of pain, pain site, chronic diseases and medications in use.

SF-36 quantifies the quality of life (QOL) from closed questions that encompass eight domains: functional, physical, vitality, general health, emotional aspects, pain, the social aspect and mental health, and two dimensions: physical and mental. The score per domain ranges from zero to 100, in which one, the higher the score, better is the QOL [20].

The Mini Nutrition Assessment provides a global screening and nutritional assessment of body mass index (BMI) and calf circumference based on closed

questions, which focuses on the risk of malnutrition or undernourished. When screening, the scores range from zero to 14, in which zero to seven suggest malnutrition, eight to 11 suggest the risk of malnutrition and 12 to 14 suggest normal nutritional status. Then, the overall assessment should be applied to people who presented malnutrition or risk of malnutrition, in which they can reach up to 16 points. The final evaluation is done through the sum of the screening and the overall evaluation, if the participant reaches less than 17 points, he is considered undernourished, from 17 to 23.5 he has a risk of malnutrition, and from 24 to 30 he is normal or has a eutrophic nutrition [21].

MAN focuses on the evaluation of malnutrition, so it was necessary for the researcher to analyze the BMI of the participants to assess the presence of obesity and low weight. The BMI is the calculation of the weight divided by the squared height, in which the BMI is considered low weight when the calculation gets less than 17, normal between 17 and 24.9 and overweight and obesity above 25 points.

The Barthel questionnaire quantifies the level of dependence of ABVD, through questions of accomplishment of activities, giving scores from 0 to 15 depending on the activity and the help that the participant needs to exercise it. The greater the dependence, the lower the score [22]. The Lawton-Brody questionnaire also deals with physical dependence, with questions about AIVD and the score goes from zero to three per question, reaching 21 points. The higher the score, the lower the dependence [23].

Prism 7 assesses the risk of functional decline in the elderly, based on seven yes or no questions, taking into consideration age, chronic diseases, among others. If the participant answers yes to three or more questions, he is already considered at risk of a functional decline [24].

The geriatric depression scale is composed of 30 yes or no closed questions about how the individual feels in the last week. Each question has 1 point,

and the total score assesses whether there is mild, severe or no depression. The greater the score, the higher the risk of depression [25].

After data collection, the information was placed in an Excel spreadsheet and exported to the statistical program SPSS version 20.0, in which descriptive tests (absolute and relative frequency), and association (Chi-square and Fisher's Exact Test) were performed. The data were then presented in a table.

The research was approved by the research ethics committee of the Hospital Onofre Lopes, CEP/HUOL with the opinion n° 562.318, and CAAE: 21996313.7.0000.5537. The Term of Free and Informed Consent (TCLE) was read, explained and requested the signing by the elderly people.

Results

A total of 120 elderly people participated in the study, 60 of them were from Natal and 60 from Santa Cruz. The majority were female, 60 to 71 years old, education up to three years, married, retired, income higher than a minimum wage and living with the partner or children, as shown in **Table 1** below.

Table 1. Socio-demographic data of elderly people in the primary care in Rio Grande do Norte, Brazil, 2016.

Socio-demographic data	Natal		Santa Cruz		Total	
	n	%	n	%	n	%
Gender						
Female	50	41.7	50	41.7	100	83.3
Male	10	8.3	10	8.3	20	16.7
Age group						
Up to 71 years old	34	28.3	40	33.3	74	61.7
More than 71 years old	26	21.7	20	16.7	46	38.3
Education						
Up to 3 years	31	25.8	30	25.0	61	50.8
More than 3 years	29	24.2	30	25.0	59	49.2
Marital status						
Without a partner	28	23.3	34	28.3	62	51.7
With a partner	32	26.7	26	21.7	58	48.3

Socio-demographic data	Natal		Santa Cruz		Total	
	n	%	n	%	n	%
Income						
Up to 1 MW*	36	30.0	14	11.7	50	41.7
>1 MW	24	20.0	46	38.3	70	58.3
Living with						
Alone	12	10.0	5	4.2	17	14.2
Partner	23	19.2	31	2.8	54	45.0
Children/Grandchildren	25	20.8	21	17.5	46	38.3
Other	0	0.0	3	2.5	3	2.5
Job situation						
Retired	51	42.5	43	35.8	94	78.3
Working	1	0.8	3	2.5	4	3.3
Taking care of the house	8	6.7	13	10.9	21	17.6
On leave	0	0.0	1	0.8	1	0.8

Table 2 shows details of pain and health conditions, in which a high index of pain, chronic type, moderate intensity, followed by intense and localized mainly in the dorsal and lower limbs (LL). It is also observed the significance for the predominance of participants with chronic diseases ($p=0.019$) and the use of medications ($p=0.041$).

Table 2. Health care and health information for the elderly in the primary care of Rio Grande do Norte, Brazil, 2016.

Health and care data	Natal		Santa Cruz		Total	
	n	%	n	%	n	%
Pain in the last week						
Yes	45	37.5	43	35.8	88	73.3
No	15	12.5	17	14.2	32	26.7
Type of pain						
Chronic	33	27.5	31	25.8	64	53.3
Acute	13	10.8	12	10.0	25	20.8
Without pain	14	11.7	17	14.2	31	25.8
Pain scale						
Absent	14	11.7	17	14.2	31	25.9
Mild	8	6.7	10	8.3	18	15.0
Moderate	21	17.5	19	15.8	40	33.3
Intense	17	14.2	14	11.7	31	25.8

Health and care data	Natal		Santa Cruz		Total	
	n	%	n	%	n	%
Place of the pain						
Without pain	14	11.7	17	14.2	31	25.8
Lumbar	6	5.0	2	1.7	8	6.7
LL	14	11.7	10	8.3	24	20.0
Dorsal	12	10.0	17	14.2	29	24.2
UL	4	3.3	6	5.0	10	8.3
Generalized	4	3.3	5	4.1	9	7.5
Face/Head	6	5.0	3	2.5	9	7.5
Chronic Diseases						
Yes	56	46.7	46	38.3	102	85.0
No	4	3.3	14	11.7	18	15.0
Other diseases						
Yes	27	22.5	21	17.5	48	40.0
No	33	27.5	39	32.5	72	60.0
Medication use						
Yes	55	45.8	47	39.2	102	85.0
No	5	4.2	13	10.8	18	15.0

The **Table 3** discriminates the nutritional aspect from five variables, with the waist circumference as the most altered, with a predominance of elderly people with a very high circumference, followed by BMI that presented elderly enough in the overweight category. It was also evaluated the screening and the overall evaluation of MAN, showing that many of the eating habits of these elderly people present malnutrition risk or are undernourished. Lastly, the circumference of the calf was verified with the presence of malnutrition in some elderly people. These data suggest that the nutritional aspect is a healthy demand for this sample.

Regarding the functionality, it is noted that the elderly people have alterations mainly in the AIVD, in which the majority of the elderly have partial dependence for these activities. Another important factor to note is that almost half of the sample is at risk of functional decline and they have a partial dependence on ABVD, making the functionality a health indicator of these elderly people.

Table 3. Demands on the health of the elderly in the primary care of Rio Grande do Norte, Brazil, 2016.

Demands on health	Natal		SantaCruz		Total	
	n	%	n	%	n	%
Risk of functional decline						
Without risk	31	25.8	37	30.8	68	56.7
Risk of functional decline	29	24.2	23	19.2	52	43.3
ABVD						
Mild dependence	22	18.3	24	20.0	46	38.3
Independent	38	31.7	36	30.0	74	61.7
AIVD						
Partial dependence	52	43.3	48	40.0	100	83.3
Independent	8	6.7	12	10.0	20	16.7
Nutritional Aspects						
Screening						
Normal	33	27.5	38	31.7	71	59.2
Risk of malnutrition	21	17.5	21	17.5	42	35.0
Malnutrition	6	5.0	1	0.8	7	5.8
Final Evaluation						
Normal	28	23.3	23	19.2	51	42.5
Risk of malnutrition	27	22.5	36	30.0	63	52.5
Malnutrition	5	4.2	1	0.8	6	5.0
BMI						
Low weight	9	7.5	6	5.0	15	12.5
Eutrophy	22	18.3	28	23.3	50	41.7
Overweight	29	24.2	26	21.7	55	45.8
Calf circumference						
Normal	51	42.5	54	45.0	105	87.5
Malnutrition	9	7.5	6	5.0	15	12.5
Geriatric depression scale						
Absence of depression	32	26.7	40	33.3	72	70.0
Slight depression	26	21.7	16	13.3	42	35.0
Severe depression	2	1.7	4	3.3	6	5.0

Finally, the risk of depression of the participants was evaluated, in which the presence of mild and severe depression was observed in a portion of the study population. This fact considered the risk of depression as the third health demand of these elderly people.

The **Table 4** presents the absolute and relative frequency of the quality of life of the elderly, showing that the elderly have worse quality of life in the pain and general health ($p=0.035$) domains, and the best domains were the emotional and mental health aspects. It should be emphasized that the social function had a significant difference between cities ($p < 0.001$). Among the dimensions, physical health presented poorer quality of life among the elderly. The total score shows that these elderly people have a good quality of life, being significant ($p=0.006$).

Table 4. The quality of life of elderly people in the primary care of Rio Grande do Norte, Brazil, 2016.

Quality of life (SF-36)	Natal		Santa Cruz		Total	
	n	%	n	%	n	%
Domains						
Pain						
Worse QOL	44	36.7	49	40.8	93	77.5
Good QOL	16	13.3	11	9.2	27	22.5
General Health Status						
Worse QOL	40	33.3	50	41.7	90	75.0
Good QOL	20	16.7	10	8.3	30	25.0
Social function						
Worse QOL	10	8.3	28	23.3	38	31.7
Good QOL	50	41.7	32	26.7	82	68.3
Physical aspect						
Worse QOL	19	15.8	15	12.5	34	28.3
Good QOL	41	34.2	45	37.5	86	71.7
Vitality						
Worse QOL	15	12.5	19	15.8	34	28.3
Boa QOL	45	37.5	41	34.2	86	71.7
Functional aspect						
Worse QOL	15	12.5	16	13.3	31	25.8
Good QOL	45	37.5	44	36.7	89	74.2

Quality of life (SF-36)	Natal		Santa Cruz		Total	
	n	%	n	%	n	%
Domains						
Emotional aspect						
Worse QOL	2	1.7	8	6.7	10	8.3
Good QOL	58	48.3	52	43.3	110	91.7
Mental health						
Worse QOL	7	5.8	3	2.5	10	8.3
Good QOL	53	44.2	57	47.5	110	91.7
Dimensions						
Physical health						
Worse QOL	23	19.2	16	13.3	39	32.5
Good QOL	37	30.8	44	36.7	81	67.5
Mental health						
Worse QOL	4	3.3	9	7.5	13	10.8
Good QOL	56	46.7	51	42.5	107	89.2
Total Score						
Worse QOL	0	0.0	8	6.7	8	6.7
Good QOL	60	50.0	52	43.3	112	93.3

Given the presented data, it is suggested that the sample of this study had three types of health demands, which the main is the functionality, followed by the nutritional aspect and the risk of depression. The **Table 5** describes the health demands of the elderly.

Table 5. Health demands of the elderly in the primary care of Rio Grande do Norte, Brazil, 2016.

Health demands	Natal		Santa Cruz		Total	
	n	%	n	%	n	%
Functional AIVD						
Yes	52	43.3	48	40.0	100	83.3
No	8	6.7	12	10.0	20	16.7
Risk of functional decline						
Yes	29	24.2	23	19.2	52	43.3
No	31	25.8	37	30.8	68	56.7
Functional ABVD						
Yes	22	18.3	24	20.0	46	38.3
No	38	31.7	36	30.0	74	61.7
Nutrition BMI						
Yes	38	31.7	32	26.7	70	58.3
No	22	18.3	28	23.3	50	41.7

Health demands	Natal		Santa Cruz		Total	
	n	%	n	%	n	%
Nutrition screening						
Yes	27	22.5	22	18.3	49	40.8
No	33	27.5	38	31.7	71	59.2
Global Nutrition						
Yes	32	26.7	37	30.8	69	57.5
No	28	23.3	23	19.2	51	42.5
Risk of Depression						
Yes	28	23.3	20	16.7	48	40.0
No	32	26.7	40	33.3	72	60.0

Discussion

This study highlights the analyses of the socio-demographic and health aspects of the elderly in primary care, considering the demands related to QOL, physical frailty, functionality and geriatric depression. Given the results, the comparative study of the QOL among the elderly is sought. The female majority in the sample is close to other findings [26-28]. Even given this reality in both scenarios, the gender was not significantly associated with QOL.

Another finding in Brazil indicated better QOL results among men when compared to women when they had a greater burden of diseases and comorbidities [29]. Thus, there was a contrast of this study, obtaining a predominance of chronic diseases in the female.

Chronic diseases and comorbidities were highlighted in the sample studied, with Santa Cruz having a lower number of elderly patients. A cohort study highlighted the presence of comorbidities as a major impact factor in the QOL of the elderly, also emphasizing the deficiency and the physical dependence [30]. Opposite to this evidence, this study did not show a statistically significant association between the presence of diseases and QOL. However, considering the total sample, a significant association between the functional capacity domain and the absence of diseases was observed.

Recent studies point out that problem from diseases and comorbidities can have an attenuated impact when the individual starts to practice healthy behaviors and positive in the aging process, such as adequate food and reduction of idleness [31-33]. In addition to this fact, active elderly tend to have a lower disease load and better health status and quality when compared to the idle ones [34]. In this sense, the importance of thinking about interventions aimed at the practice of physical activity in the elderly is highlighted.

About the demands of QOL (SF-36), the elderly presented the functional capacity and physical health domains, with predominance for better performance. Other findings show that the functionality has a significant association with QOL in elderly Canadians [35]. When evaluating institutionalized elderly, a functional decline occurred according to the advancement of age [28].

Given the prominence of these domains, it has been observed that interventions aimed at the promotion of physical activity during old age present positive results although with low frequency [36].

In addition to the physical and functional support, the social interaction within the context of the elderly is highlighted [37]. The World Health Organization (WHO) presents the concept of active aging, in which the elderly deserve health opportunities and conditions, and political and social context, with the full exercise of their citizenship [38]. About the demand of the social function domain (SF-36), Natal stood out positively, presenting a significant difference compared to Santa Cruz.

Through this reality, the importance of stimulating the interaction between individuals of different ages and cultures is considered. Findings from Brazil indicate the association between the presence of diseases and the fact that the elderly do not leave their home. When the elderly go out, they present great potential for socialization, with an impact on their QOL [37]. In this way, the relationship between the social and the physical domain is identified.

In the United States of America, a cohort study with the elderly identified the presence of social support inversely proportional to the level of physical frailty, which is considered a major impact factor in QOL [39]. A Chinese study showed that the social domain was more impaired, according to the increased fragility identified in the elderly of the sample [40]. In this sample, the elderly of Natal presented a greater risk of the functional deficit (PRISMA 7), compared to Santa Cruz, but without statistical significance.

Given the results regarding fragility and social aspects, the link between family support and QOL is identified, considered an important factor and has a strict relation with the domain of emotional aspects [41]. In Poland, an investigation into family emotional support highlighted the significant difference for non-institutionalized elderly people [27]. In this study, there was a similarity between elderly people who have and those who do not have companionship.

Among the other demands of QOL, mental health was better evaluated in most of the elderly of this sample, with no significant difference. Having a strong connection to this domain, the depression had an important focus when evaluating the mental and emotional aspects of the QOL of the elderly [28]. Recently, low QOL scores have been found in elderly patients with depressive symptoms when compared to elderly patients without these symptoms [26].

The evaluation of geriatric depression (GDS-30) highlighted a predominance of the absence of depressive symptoms. Another study highlighted that mental health domains had a better evaluation in the results [42], in which it resembles the results of the current research. A cohort indicates a strong association between increased health-related QOL and declining levels of depression in the sample [43]. It was observed that in Santa Cruz, the emotional aspects had a negative and significant association with the age group of the older besides the absence of a partner.

According to the BMI and overall evaluation of MAN, most of the elderly had nutritional demands for both instruments. Corroborating this result, studies [44] evidenced that 13.5% presented low weight, 28.9% had eutrophy and 57.6% had an overweight of the 402 non-institutionalized elderly assisted in the FHS of Francisco Beltrão – PR, using the BMI bands [45]. While in the study of Azevedo et al. [3], with 243 elderly in six long-term institutions (ILP) in the city of Natal/RN, 10.96% presented low weight, 36.12% eutrophy and 52.89% overweight/obesity, considering 155 elderly people due to the impossibility of estimating the BMI of all individuals showing a higher percentage of nutritional deviations and, consequently, of demands.

Considering the MAN, the literature [46], presented a higher percentage (89%) than this study (57.5%) for the risk of malnutrition or undernourished. However, it reveals a concern for the nutritional aspects of both localities, considering the issues of global assessment, such as the quantity of medicines, consumption of protein foods (meat in general, milk and dairy products, eggs, legumes), fruit and vegetables, quantity of liquids, circumference of the leg and arm. MAN is considered an indispensable tool in nutritional assessment since it serves as a parameter for identifying the risk of malnutrition in the elderly [46].

The increase in nutritional deviations (malnutrition, overweight, and obesity) in the elderly has been demonstrated through different studies, prevailing in eutrophic individuals. Then, there is a prevalence of susceptibility to the occurrence of chronic diseases, reduction of functional capacity and higher mortality. Thus, healthy eating is essential to prevent, decrease or reduce the risks of these diseases in this life cycle [47].

Regarding functional dependence, evaluated by the Barthel Questionnaire, the study showed that almost half of the elderly had mild dependence. It is observed that with aging, there is an increase in social losses and physical dependence, leading to a reduction in the autonomy and health of the elderly,

whose health is directly related to independence, even if they present chronic diseases [48]. Thus, if the elderly continue to have autonomy, choosing and performing their activities alone, the difficulties will be smaller, ensuring an active aging. As a multi-dimensional concept, the term active aging includes concepts of activity, health, independence and productivity in the elderly. In this way, understanding the degree of this dependency allows the evaluation, formulation, and implementation of plans of care and/or treatment directly applied to the needs of this population ensuring them a better quality of life [34, 49].

From the Lawton Questionnaire, it was also possible to observe the verification of the functional capacity including the AIVD and life with more autonomy, expressive results, being the same for the partial dependence in the sample. A similar result was found in a study [50], where 50.2% of the study population presented a dependence impairment. Those who from the test were classified as independent correspond to a small portion of the sample. For Quaglino et al. [51], the loss of functional autonomy is usually the result of an imbalance between individual's functional capacities and the social and material available resources, and normally decreases with aging as a consequence of the wide range of physical, cognitive, emotional and/or social changes.

By the identification of the demands of the elderly, the need for a stage of planning interventions and their subsequent implementation is highlighted. In this sense, they will be conducted, giving priority to improving the deficits presented and maintaining positive results.

As a limitation of this study, the cross-sectional cut is was highlighted, hindering inferences as well as the number of individuals studied. However, it is considered the insalubrity to perform the data collection, due to the distance traveled between the two research scenarios.

Conclusion

The study sample was 120 elderly people, the majority were young elderly, retired, married, living together, and with income greater than a minimum wage.

These elderly had chronic pain of moderate intensity, mainly in the dorsal area. The elderly reported having chronic diseases and used medication for such problems, and these data were significant.

Although the QOL was good in the total score, it was observed that these elderly people presented worse QOL in the pain and general health status domain. The worst score was due to the physical dimension, and these data were associated with the demands found.

The studied group presented health demands in the three aspects surveyed, being the functionality, the nutritional aspect and the risk of depression, respectively.

With the characterization of these health demands, it is proposed that other studies need to be done with this population, so it will be possible to plan and implement a multidimensional intervention, then these health demands are met and we can provide an old age with better QOL and health for the elderly.

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