Quality of life of elderly people enrolled in a health care program and associations with the characteristics of the patient, the disease, the therapy, and social support.

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Abstract

The increase in life expectancy among individuals over 65 years of age has changed the age pyramid of the Brazilian population. Quality of life (QoL) is an important parameter to assess health status. The aim of the study was to describe the QoL of elderly people enrolled in an elderly care program, showing associations with the characteristics of the patient, disease, therapy, and social support, contributing to improve care for the elderly who receive this service. This was a descriptive, quantitative, cross-sectional, correlational study with 85 individuals aged 60 years or more, who were literate, independent in activities of daily living, without diagnosed cognitive/psychological impairment, and who had been going to the Nossa Senhora do Rosário Social Center for at least one month. To collect the independent variables, an instrument developed by the authors was used; in addition to the Morisk-Green test and Medication Regimen Complexity Index (MRCI). QoL was assessed by WHOQOL-brief. 89.4% were women; 38.8% were 60 to 70 years old; 77.6% had up to 3 comorbidities, the most frequent was hypertension (77.65%); 49.41% used polypharmacy, the MRCI ranged from 2.5 to 48.0 points for one to twelve medications/day; 57.65% acquired their medication through the SUS; 64.80% had medium/low adherence; 43.53% declared having a good perception of health. As for the WHOQOL-brief domains, the highest mean was obtained in the social domain (75.5), followed by the psychological (68.3), physical (67.1), and environmental (64.8) domains. The results of this study highlighted that the female gender, presence of diseases, therapeutic complexity, and perception of poor health are associated with lower quality of life indices in this population.

Keywords: Quality of Life. Seniors. Elderly Health. Social Support.

INTRODUCTION

Population aging is a worldwide phenomenon. In 2025 there will be 1.2 billion people over 60 years of age, and the portion of the elderly aged 80 years and older will constitute an age group of greater numerical importance[1]. In Brazil, the demographic and epidemiological transition has been modifying the population's age pyramid as a result of the increase in life expectancy among individuals aged over 65 years[1].

The increase in life expectancy can be considered a real achievement insofar as

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quality is added to the additional years of life. Therefore, in this scenario, health policies aimed at the elderly must consider their functional capacity. This encompasses the autonomy and independence of an elderly individual, in addition to their participation in society, care, and self-satisfaction, as well as expanding their performance in the social environment and elaborating new meanings at this stage of life, thus, encouraging prevention, care and comprehensive health care for this population[2,3].

Population aging has brought about changes in the incidence and prevalence of diseases, especially chronic non-communicable diseases (CNCDs)[3]. These diseases have contributed to the increase in death rates, as the increase in their incidence has not led to the emergence of public policies that truly meet their real needs[3]. In 2015, the World Health Organization (WHO) showed that approximately 35 million people worldwide died from CNCDs. In Brazil, in 2009, approximately 72.4% of deaths were due to these diseases, demonstrating that the current public health policies were no longer able to reduce the injuries and deaths resulting from the most common chronic diseases in the elderly[4].

Chronic diseases are not characterized as communicable diseases, but are identified as a set of multiple, non-infectious, long-lasting risk factors that can lead to the development of disabilities. Moreover, among the elderly, the most prevalent CNCDs are osteoarticular diseases, systemic arterial hypertension (SAH), cardio and cerebrovascular diseases, diabetes mellitus, chronic respiratory diseases, and cancer, in addition to degenerative diseases such as dementia, Parkinson's disease and others. Some people have more than one diagnosis of chronic disease, further aggravating their quality of life[5].

According to Campolina *et al.*[5], quality of life started to be incorporated as an important parameter for the assessment of health status from the 1960s onwards. It is defined as subjective quality of life, that is, as perceived by people, and what characterizes the concept of quality of life are its subjectivity and multidimensional aspects. Subjectivity is related to the assessment that the individual makes of their own health status, based on an assessment that the individual makes of themselves. Multidimensionality concerns the fact that this assessment focuses on different domains of human nature: physical, psychological, emotional, social, economic, spiritual, and others[6].

Making use of the term quality of life implies an evaluation process of how one lives and the context in which this life takes place. It involves a broad chain of ideas, affected in a complex way by the individual's physical health, psychological state, level of independence, and social relationships[7].

Several instruments have been developed with the purpose of adding subjective parameters to the overall assessment of individuals. Literature classifies them as generic and specific instruments. The generic tests are those that attempt to globally assess the most important aspects related to the quality of life of patients, and specific ones are those that individually and specifically assess certain aspects of quality of life[6].

Therefore, due to the frequent concerns regarding the development of instruments to assess measures of the impact of the disease, impairment of daily activities, and the severity of the diseases, the World Health Organization (WHO) established a group, called the Quality-of-Life Group (WHOQOL Group), which was responsible for developing the instrument called World Health Organization Quality of Life (WHOQOL). This instrument assesses quality of life, considering the interrelationship of the environment with physical aspects, psychological aspects, level of independence, social relationships, and personal beliefs. The instrument has

two versions, the WHOQOL-100 and the WHOQOL-brief. The WHOQOL-brief was developed due to the need for an instrument that required little time to complete, and that preserved the psychometric characteristics of the original instrument[8].

In this context, it is noted that the demographic transition, resulting from the aging of the population, has been changing the structure of the age pyramid, and increasing the population's life expectancy. However, with these changes, the incidence of diseases, especially Chronic Non-Communicable Diseases (CNCDs), such as Systemic Arterial Hypertension (SAH) and Diabetes Mellitus (DM), has increased, which can lead to an inability to perform activities of daily life along with a worsening of well-being and satisfaction with health. Therefore,

the quality of life of these individuals has become a major concern worldwide and is the focus of studies and the development of assessment instruments. Thus, population aging affects society as a whole and is related to a greater number of chronic diseases, which consequentially implies a greater demand for health services. The difficulties arising from this process, such as disabilities, added to socioeconomic aspects such as income, social support, and work relationships, impact the quality of life of these individuals[2].

Therefore, the objective of this study was to describe the quality of life of elderly people with chronic diseases in a health care program, looking for evidence of associations with the characteristics of the patient, disease, therapy, and social support through the WHOQOL-Brief instrument.

MATERIALS AND METHODS

This was a descriptive, quantitative, cross-sectional, correlational study aiming to describe the quality of life of elderly individuals with chronic non-communicable diseases, demonstrating associations with the characteristics of the patient, disease, therapy, and social support.

This study was carried out at the Nossa Senhora do Rosário do Pompeia Social Center (CNPJ 60.809.837/0001-08) located in the Pompéia district, in the Western Region of the City of São Paulo, after approval by the Research Ethics Committee (REC) of the São Camilo University Center, under approval No. CAEE 78591717.2.0000.0062, The institution is a philanthropic association for public use, recognized by the Federal, State and City Governments, but its maintenance is carried out by spontaneous contributions of volunteers and parishioners. They have care services for psychological, social, pharmaceutical, dental, nursing, nutritional, physiotherapy, medical specialty needs, as well as a community center for the elderly, a per-

manent bazaar, legal assistance, a literacy course, health education (memory, singing, movement, and bingo groups) and assistance programs, a home care program for the elderly (HCPE), and milk and food provision baskets. The Nossa Senhora do Rosário Parish initially created this program in 1998 with the aim of providing specialized home care to elderly residents of the community and their families of a delimited area nearby. It has an estimated registered population of 600 people, including the elderly receiving home care assistance.

The sample was expanded and is part of the study by Ferrari, et al (2018)[9], totaling 85 elderly people, who were registered at the Nossa Senhora do Rosário da Pompeia Social Center. Sample calculation was based on a 5% error and with a 95% confidence level[10].

Individuals aged 60 years or over, independent in their activities of daily living (ADL), with no diagnosed cognitive and/or psychiatric problems, who attended the acti-

vities offered at the institution for at least 1 month, who were not included in the home care program and who agreed to participate in the research by signing an informed consent form were used as inclusion criteria. These criteria were established considering the instruments used in data collection that required participants to have instructional and cognitive skills to understand and answer the questions.

During collection, the following instruments described below were applied:

Instrument for data collection

A questionnaire developed by the authors to collect data on most of the independent variables (Appendix A), regarding demographic characteristics, information related to the disease and treatment; family support and assistance they received at the Nossa Senhora do Rosário Social Center. To collect data on the independent variables adherence and therapeutic complexity, the Morisky-Green[11] tests and the medication regimen complexity instrument (MRCI) were respectively applied[12].

WHOQOL-brief quality-of-life instrument

The WHOQOL-Brief was validated in Brazil by Fleck, (2000)8, demonstrating good psychometric performance and practical use. This instrument contains 26 questions divided into four domains: social relationships (personal relationships, social support and sexual activity), psychological (positive feelings, memory and concentration, self-esteem, body image and appearance, negative feelings, and spirituality, religiosity and personal beliefs), physical (pain and discomfort, energy and fatigue, sleep and rest, daily life activities, dependence on medication or treatments, and work capacity) and environmental (physical safety and protection, home environment, financial resources, health and social care, opportunities to acquire new information and skills, opportunity for recreation/leisure, physical environment, and transport). Each domain is composed of questions whose answer scores vary between 1 and 5. The instrument is the abbreviated version of the WHOQOL-100, which consists of 100 questions. The WHOQOL method was developed using a cross-cultural approach13.

Carrying out data collection

The elderly individuals were invited to participate in the research after having participated in activities or consultations offered by the Social Center. Those who initially agreed to participate in the study were referred to the location provided for the interview. At first, the interviewer explained what the study is, what its purpose is, and guaranteed that they were not exposed to any personal risk, or loss of any benefit received at the Social Center, as well as the goals and benefits of the study. After this explanation, the interviewer reiterated the information by reading the free and informed consent form (ICF) with the participant, and final consent was obtained by signing the ICF. A copy was made available to the respondent, and another remained with the interviewer.

The places for the interview were made available by the Nossa Senhora do Rosário Social Center, so that the interview could take place individually and without interference. It was done in this way according to the guidelines of those responsible for the co-participating institution. At the time of the interview, the data collection instruments were applied.

Data analysis

The data from this study were subjected to statistical tests, as instructed by a specialist in the field.

Descriptive statistics were performed for all variables, aiming at the general characterization of the study sample and description of the patients' quality of life. First, association tests were performed between the domains and the total value of the questionnai

re (WHOQOL-Brief) and the independent variables. The relationships between the domains of the quality-of-life questionnaire (WHOQOL-Brief) and the variables of interest were evaluated with Pearson's correlation coefficient for numerical variables, Kendall's coefficient for ordinal variables and the T test, Wilcoxon-Mann-Whitney test, Kruskal-Wallis test, or ANOVA model for categorical variables. The verification of residual normality was carried out by inspecting the QQ graph and for homoscedasticity the Levene test was used. A regression model was fitted using LASSO to select the predictor variables.

Ethical aspects

The project was submitted and approved under the number CAEE 78591717.2.0000.0062, by the Research Ethics Committee (REC), the interviewees were previously informed and clarified about the objective of the study and that there would be no harm in relation to the assistance they received at the Nossa Senhora do Rosário Social Center, if they chose not to participate in the study. Those who chose to participate signed the informed consent form (ICF) and received a copy of the term and were guaranteed the absolute confidentiality of their identity.

RESULTS

The study sample consisted of 85 registered elderly who participated in the activities offered at the institution and who met the study's eligibility criteria. Of these, 76 (89.41%) were women and 9 (10.59%) men. Of these, 33 (38.82%) participants were aged between 60 and 70 years, 24 (28.24%) between 71 and 80 years, 25 (29.41%) between 81 and 90 years, and 3 (3.53%) over 91 years; 60 (70.59%) declared themselves white, 21 (24.71%) brown/brown, and 4 (4.71%) black; 38 (44.71%) declared themselves widowed, 21 (24.71%) married, 8 (9.41%) single, 10 (11.76%) divorced, 7 (8.24%) separated, and 1 (1.18%) dating; 84 (99%) declared to have a religion, where 66 (77.65%) were Catholics, 12 (14.12%) were Evangelicals, and 6 (7.06%) were Spiritists; and regarding the level of education of the studied population, 33 (38.82%) had an incomplete primary education.

Regarding the presence of comorbidities, 77.65% had up to 3 comorbidities, among the most mentioned were hypertension among 59 individuals (69.41%), increased cholesterol among 39 (45.88%) individuals, and diabetes among 23 (27.05%) of the respondents; 49.41% used polypharmacy.

When analyzing adherence using the Morisky-Green test, it was found that 35.29% had high adherence, followed by 50.59% of patients had a medium adherence, and 14.12% had a low adherence, with an average of 19.25 points (minimum 2.5 and maximum 48 points) in the MRCI questionnaire.

Regarding the acquisition of medication, 49 (57.65%) acquired it through the SUS, 18 (21.18%) in the church, 15 (17.65%) bought it, and 3 (3.52%) through a subsidized pharmacy. When individuals could not get the medication, the majority 55 (64.71%) declared that they bought it and did not go without taking their medication, 9 (10.59%) did not take it, 3 (3.53%) could do it with friends and relatives, one individual respectively reported acquiring it in another social center, church and subsidized pharmacies, and 15 (17.65%) of respondents did not respond.

Respondents were asked whether they had support from family and friends; 44 (51.76%) reported having support, while 41 (48.24%) did not. Regarding frequency, among those who reported receiving support, 27 (31.76%) always have help, 12 (14.12%) almost always have help, and 9

(10.59%) rarely have help.

When asked about the performance of non-pharmacological therapy, 46 (54.12%) participants reported doing it, and among them, varied physical activity was among 18 (21.18%) individuals; gymnastics among 3 (3.53%) individuals; diet and food control among 13 (15.29%) of the respondents; walking among 6 (7.06%) and physical therapy among 5 (5.88%) individuals interviewed; 2 (2.35%) received electrical stimulation of the pelvic muscles, 1 (1.18%) yoga, 2 (2.35%) Pilates, 3 (3.53%) acupuncture, and 1 (1.18%) hydrogymnastics.

With regards to the service at the Social Center, 68 (80%) reported being very good, 15 (17.65%) good, and 2 (2.53%) had no opinion. Respondents also reported on their perception of health, with 10 (11.76%) declaring it excellent; 4 (4.71%) very good; 37 (43.53%) good; 28 (32.94%) reasonable; 3 (3.53%) bad; 3 (3.53%) very bad.

Regarding the assessment of the individuals' quality-of-life index, table 1 presents the statistical data of the total score, and of each domain of the WHOQOL-Brief, which showed a higher mean (75.49) in the social domain and the lesser means in the physical (67.1) and environmental (64.8) domains.

Table 2 shows a correlation (r=-2.003) between females and the physical domain (p=0.048), noting that despite the significant number of women in this study, the average quality of life in the physical domain was higher in male individuals.

In table 3, the WHOQOL-brief was associated with the numerical variables of the study, noting that the strongest correlation was between physical aspects and therapeutic complexity. The r value (-0.315) indicates a weak to moderate relationship between these variables, the greater the therapeutic complexity, the lower the average quality of life in the physical aspect, which is statistically significant (p=0.003).

When associating the WHOQOL-brief with the categorical variables (Table 4), it is noted that the strongest correlation (r=0.406) was between the physical aspects and the perception of health: the better the perception of health, the higher the value attributed to quality of life in this domain (p<0.001). This relationship also occurred with the overall WHOQOL with slightly lesser strength. In addition, weaker and more positive correlations were also observed and were statistically significant between the physical and educational (p=0.014) domains and frequency of consultations (p=0.033), the psychological domain with health perception (p<0.01) and frequency of consultations (p=0.008), the social domain with health perception (p=0.025), and the environmental domain also with health perception (p=0.001) and frequency of consultations (p=0.010).

Table 5 shows a lower mean of quality of life in the physical and psychological domains among the elderly with more than 03 comorbidities, with a borderline p value (p=0.05).

It can be seen in table 6 that individuals who obtained medication at SUS centers and through their own resources had a lower quality-of-life index in the psychological domains with a significant p-value (0.012). The same occurred when associating this aspect with the total WHOQOL, with a statistically significant correlation (p=0.042).

The associations of the WHOQOl-brief domains and total score with the variables for religion, occupational status, living with someone, and assistance in treatment did not present significant associations.

Table 7 shows the adjusted logistic regression. The only variable selected for the WHOQOL-brief was health perception, for in each category in which it increases, the quality of life increases by 04 units (p<0.001).

The construction of the linear regression model for the quality-of-life response variable was performed using the LASSO technique for the predictor variables. The adjusted R^2 was 0.2006, indicating that the model explains 20% of the WHOQOL-brief variance.

Table 1 – Descriptive statistics of the total score and of each domain of the WHOQOL-brief. São Paulo, 2019-2020.

Domains	Average (SD)	95% CI	Median	Minimum - maximum
Physical	67.1 (14.9)	64.0-70.2	67.9	28.5-96.4
Psychological	68.3 (13.9)	65.3-71.3	70.8	29.2-95.8
Social	75.5 (13.5)	70.8-79.2	75.0	41.7-100.0
Environment	64.8 (13.3)	62.0-67.7	65.6	25.0-96.9
WHOQOL-total	66.3(10.1)	64.1-68.5	67.0	44.0-93.0

Legend: SD= Standard Deviation; WHOQOL-total= Total score of World Health Organization Quality-of-Life-Brief Instrument.

Table 2 – Association of WHOQOL-brief domains with the gender variable. São Paulo 2019-2020.

WHOQOL	Sex	n	Average - SD	95% CI	min-max	r	p-value
Physical	Female	76	66.07-14.59	62.74-69.4	28.57-96.43	-2.003	0.048*
	Male	9	76.19 -11.71	67.19 –85.19	53.57-96.43		
Psychological	Female	76	67.60 -14.07	64.38-70.81	29.17-95.83	-1.422	0.159*
	Male	9	74.54 -11.50	65.7-83.37	54.17-87.5		
Social	Female	76	75.55 -13.56	70.83-79.17	41.67-100	375.5	0.623**
	Male	9	75.00 -13.18	66.67-87.5	58.33-100		
Environment	Female	76	64.31 -13.56	61.21-67.41	25-96.88	-1.002	0.310*
	Male	9	69.10 -10.40	61.09-77.1	46.88-81.25		
WHOQOL	Female	76	69.10-10.42	63.4-68.1	44-93	-1.502	0.137*
	Male	9	65.75 -10.29	64.52-77.71	61-84		

*Paired t-test.** Wilcoxon-Mann-Whitney test

Table 3 – Association of WHOQOL-brief with numerical variables. São Paulo 2019-2020.

WHOQOL	Variable	N	r	95%CI.low	95%CI.high	p-value*
Physical	Age	85	-0.079	-0.287	0.136	0.473
Physical	Therapeutic complexity	85	-0.315	-0.495	-0.109	0.003
Physical	Income	57	0.117	-0.148	0.366	0.387
Physical	Dependent income	85	-0.005	-0.218	0.209	0.967
Psychological	Age	85	-0.031	-0.243	0.183	0.776
Psychological	Therapeutic complexity	85	-0.140	-0.343	0.075	0.201
Psychological	Income	57	0.113	-0.152	0.363	0.401
Psychological	Dependent income	85	-0.043	-0.254	0.172	0.697
Social	Age	85	0.037	-0.178	0.248	0.739
Social	Therapeutic complexity	85	-0.040	-0.251	0.175	0.719
Social	Income	57	0.219	-0.044	0.454	0.102
Social	Dependent income	85	-0.081	-0.289	0.135	0.462

to be continued...

...*continuation table 3*

WHOQOL	Variable	N	r	95%CI.low	95%CI.high	p-value*
Environmental	Age	85	0.175	-0.040	0.374	0.110
Environmental	Therapeutic complexity	85	-0.099	-0.306	0.117	0.368
Environmental	Income	57	0.201	-0.063	0.439	0.134
WHOQOL	Age	85	0.025	-0.189	0.237	0.817
WHOQOL	Therapeutic complexity	85	-0.201	-0.397	0.012	0.065
WHOQOL	Income	57	0.187	-0.077	0.427	0.163
WHOQOL	Dependent income	85	-0.105	-0.311	0.111	0.341

*Pearson's product-moment correlation

Table 4 – Association of the WHOQOL-Brief domains with the categorical variables for education, health perception and frequency of consultations. São Paulo 2019-2020.

WHOQOL	Variable	N	r	95%CI.low	95%CI.high	p-value*
Physical	Education	82	0.209	-0.009	0.407	0.014
Physical	Health perception	85	0.406	0.211	0.570	< 0.001
Physical	Frequency of consultations	85	0.175	-0.040	0.374	0.033
Psychological	Education	82	0.088	-0.131	0.300	0.304
Psychological	Health perception	85	0.290	0.082	0.474	< 0.001
Psychological	Frequency of consultations	85	0.218	0.005	0.412	0.008
Social	Education	82	0.145	-0.074	0.351	0.106
Social	Health perception	85	0.202	-0.012	0.398	0.025
Social	Frequency of consultations	85	0.156	-0.060	0.357	0.070
Environmental	Education	82	0.166	-0.053	0.369	0.052
Environmental	Health perception	85	0.272	0.063	0.459	0.001
Environmental	Frequency of consultations	85	0.212	-0.002	0.406	0.010
WHOQOL	Education	82	0.178	-0.040	0.380	0.033
WHOQOL	Health perception	85	0.348	0.146	0.522	< 0.001
WHOQOL	Frequency of consultations	85	0.242	0.030	0.433	0.003

*Kendall's rank correlation tau

Table 5 – Association of WHOQOL-brief domains with the comorbidity variables. São Paulo 2019-2020.

Variable	Comorbidities	No.	Average (SD)	min-max	95% CI	r	p-value
Physical	None	5	60.0-19.30	39.29-82.14	36.04-83.96		
	Up to 3	66	69.21-13.74	28.57-96.43	65.83-72.59	3.1131	**0.050***
	More than 3	14	59.95-14.84	35.71-78.57	51.38-68.52		
Psychological	None	5	64.17-12.36	50-79.17	48.82-79.51		
	Up to 3	66	70.27-13.03	37.5-95.83	67.06-73.47	3.1017	**0.050***
	More than 3	14	60.71-16.40	29.17-87.5	51.24-70.18		
Social	None	5	75.00-16.67	58.33-91.67	58.33-91.67		
	Up to 3	66	75.13-13.91	41.67-100	70.83-79.17	0.8925	0.640**
	More than 3	14	77.38-10.56	50-91.67	75-83.33		

to be continued...

...continuation table 5

Variable	Comorbidities	No.	Average (SD)	min-max	95% CI	r	p-value
	Up to 3	66	66.05-12.32	37.5-96.88	63.02-69.08	1.6501	0.198*
	More than 3	14	62.05- 14.02	34.38-84.38	53.96		
Environmental	None	5	56.25-21.54	25-81.25	29.51-82.99		
	Up to 3	66	66.05-12.32	37.5-96.88	63.02-69.08		
	More than 3	14	62.05- 14.02	34.38-84.38	53.96		
WHOQOL	None	5	61.00- 14.11	44-78	43.48		
	Up to 3	66	67.59- 9.48	48-93	65.26	2.4	0.097*
	More than 3	14	62.21- 11.21	44-76	55.74		

*One-way ANOVA ** Kruskal-Wallis rank sum test

Table 6 – Association of the WHOQOL Brief domains with the variable of medication acquisition. São Paulo 2019-2020.

WHOQOL	How do you get medication	N	Average (SD)	Min- Max	95%CI.low	r	p-value
Physical	How do you get medication	49	65.16– 13.96	35.71- 96.43	61.15- 69.17		
	Health Unit/SUS	3	67.86– 6.19	60.71- 71.43	52.49- 83.22	2.666	**0.100***
	Subsidized pharmacy	18	74.60– 11.02	46.43- 89.29	69.12- 80.08		
	Church	15	64.52– 19.07	28.57- 96.43	53.97- 75.08		
Psychological	Own resources	49	64.29– 12.62	29.17- 95.83	60.66- 67.91		
	Health Unit/SUS	3	72.22– 15.78	54.17- 83.33	33.04- 111.41	3.892	**0.012****
	Subsidized pharmacy	18	75.93– 12.67	54.17- 95.83	69.63- 82.22		
	Church	15	71.67– 15.53	37.5- 91.67	63.07- 80.26		
Social	Own resources	49	74.32– 13.80	41.67- 100	70.83- 79.17		
	Health Unit/SUS	3	75.00– 0.00	75- 75		1.401	0.705***
	Subsidized pharmacy	18	78.70– 13.77	50- 100	70.83- 87.5		
	Church	15	75.56– 13.54	58.33- 100	66.67- 83.33		
Environmental	Own resources	49	61.99-13.37	25- 96.88	58.15-65.83		
	Health Unit/SUS	3	64.58– 9.02	59,38- 75	42.17- 86.99	1.91	0.134**
	Subsidized pharmacy	18	69.27– 11.51	46,88- 84,38	63.55- 74.99		
	Church	15	68.75– 14.32	46,88- 87,5	60.82- 76.68		
WHOQOL	Own resources	49	63.90– 9.67	44- 93	61.12- 66.67		
	Health Unit/SUS	3	67.33– 7.37	59- 73	49.02- 85.64	2.858	**0.042****
	Subsidized pharmacy	18	71.72– 8.92	54- 83	67.28- 76.16		
	Church	15	67.53– 11.86	48- 84	60.96- 74.1		

*One-way ANOVA (Welch correction) ** One-way ANOVA *** Kruskal-Wallis rank sum test

Table 7 – Linear regression for WHOQOL-brief. São Paulo, 2019-2020.

Parameter	Coefficient	SE	95%CI.low	95%CI.high	p-value
(Intercept)	51.08	3.57	43.98	58.18	< 0.001
Health perception	4.09	0.9	2.31	5.88	< 0.001

DISCUSSION

From the 1970s onwards, Brazil's demographic profile has been transformed, from a rural society, with large families and a high risk of childhood death, to a mainly urban society, with fewer children and a new Brazilian family structure[14].

It is known that aging is a process based on major transformations, which generate changes in the population's demographic and epidemiological profiles. In 2010, life expectancy was 10.8% in the Brazilian population, gradually expanding its participation in the age composition. And, according to IBGE, it was estimated that this participation will increase to 23.8% by 2040[14].

Among the characteristics of the aging of the Brazilian population is the increase in the proportion of women, when considering the total population of each sex[15]. In this study, a sample was obtained almost predominantly of 89.41% women.

In the year 2000, for a group of 100 women there were around 81 men. And, among elderly people over 80 years old, this was accentuated, reaching 100 women for every 61 men[16].

Therefore, it is necessary to understand that the dynamics of the elderly male and female population present different rhythms, and different characteristics of mortality linked to sex. Elderly women live with non-fatal but disabling illnesses such as arthritis and hypertension. While elderly men are more exposed to lethal diseases, such as ischemic heart disease[16].

In this study, 44.71% of the population declared themselves a widow. The Brazilian Institute of Geography and Statistics (IBGE, 2016), verified in the 2010 census, an increase in the proportion of widowed, divorced, and single people, when compared to the 2000 census. This indicates that there is a growing number of people living without one marital partner. Furthermore, the last IBGE census in 2016 inferred that Brazil had eight million widowers in 2010, which represented about 4% of the population. The proportion of Brazilian widows increases with age, while the proportion of married ones decreases[17].

Thus, it is known that older women represent a greater number when it comes to widowhood. This fact, which can be explained by tradition, where the woman tends to marry older men, and when associated with a higher mortality in males than in females, increases the probability of survival of the woman in relation to her spouse. Another explanation would be the fact that widowers remarry more often than widows. This situation is the same for divorced people[15].

Religiousness was a very frequent characteristic in the studied population (99% had a religion). This can contribute to different areas, such as the feeling of well-being, reduction of levels of anxiety and uselessness, in addition to providing the development of resilience in the face of situations and difficulties inherent to aging, such as losses and physical and emotional limitations[18].

Another important factor in aging is the social role of the elderly. In this study, 71.76% of the individuals were retired, a situation that has some advantages such as rest and leisure, but also serious disadvantages, such as devaluation, disqualification, reduced income, and limited social networks. It is known that this occupational situation can influence the quality of life and health, as they feel marginalized and excluded from society. Moreover, work allows for their existence to be recognized as a citizen and helps to establish networks of relationships[19].

Chronic non-communicable diseases (CNCDs) require continuous monitoring and care, in addition to introducing limitations and consequences to daily activities. Among the most

common CNCDs, there are Systemic Arterial Hypertension (SAH), Diabetes Mellitus (DM), and heart disease20. In this study, among the most cited diseases were hypertension and diabetes.

It is known that CNCDs require continuous monitoring and care, as they influence the quality of life of the elderly, who may be more likely to have functional and mental incapacities, leading to limitations in the performance of basic activities of daily living which make self-care difficult. These difficulties or limitations can lead the elderly to depend on others[21], in addition to requiring the use of different medications, which can become polypharmacy and become a barrier to adherence to treatment[22].

Medications are used for diagnostic purposes, prevention, cure, or symptom relief, and when properly administered, they can be a tool for health promotion, protection, and recovery, in addition to being a possible ally in improving quality of life. However, it is estimated that one third of the world population does not have access to medicines, causing a repressed demand, since a large portion of the population does not have the financial capacity to pay for medicines. Due to these socioeconomic inequalities, quality of life and longevity are affected, as the individual constantly lives with Chronic Non-Communicable Diseases (CNCDs) and the difficulty in acquiring medication[23].

Adherence to treatment is a difficult task for elderly people with multiple morbidities, since, due to their physiological changes resulting from the aging process, the risk of drug interactions and adverse events is increased[20]. Therefore, the main factors that favor adherence are the clarity of the recommendations, the desire and ability of the elderly to comply with the proposed recommendations, their satisfaction with the health service, the number of long-term medications, costs, and access. Furthermore, among the factors that make it difficult, there is the set of complex

skills called the medication regimen complexity, such as reading leaflets and instructions, complying with the dosage schedule, and incorporating it into daily activities[21].

In several studies, the association between high levels of complexity and lack of adherence to the proposed treatment was observed, verifying the importance of simplifying therapeutic regimens and avoiding polypharmacy, in order to prevent the occurrence of interactions and adverse events, and increase adherence to the treatment22. The number of medications, the frequency of doses, and the prescribed instructions for administration are characteristics evaluated in the therapeutic regimen to determine the therapeutic complexity[22].

When respondents were asked about social support, 44% reported having support, which is a positive factor for both individuals involved in this action, as it contributes to better adherence to treatment and establishes bonds due to the existence of social interactions[24].

Some studies show that the greater availability of social support positively influences biological systems, the general health status, and psychological well-being of patients. Furthermore, it was found that individuals who had a higher level of social support had, consequently, a better quality of life[25].

In the analysis of domain association and total value of the instrument, it was observed that women had a statistically significant association (p=0.048) with a lower mean in the quality-of-life index in the physical domain of the WHOQOL-brief (Table 2). This is probably due to women being more exposed than men to physical and mental problems (Pereira, et al. 2006)[26], in addition to reporting negative feelings, low self-esteem, and depression more frequently[27].

In this study, there was also a significant association (p=0.003) with the numerical variable medication regimen complexity (Table 3), indicating the greater the therapeutic com-

plexity, the lower the mean quality of life in its physical aspect.

The number of medications, the frequency of doses and the prescribed instructions for administration are characteristics evaluated in the therapeutic regimen to determine the therapeutic complexity[18]. The consumption of medications involves risks, and this can be accentuated in the elderly population, due to physiological changes (decrease in muscle mass and body water, which interferes with the pharmacodynamics and pharmacokinetics of medications), lack of knowledge about their current health condition, an inadequate diet, and sensory and motor deficits. These factors can affect the quality of life of the elderly, predisposing them to discomfort, due to the adverse effects of drugs, changes in sleep and in daily life activities[28].

The presence of physical, psychological, emotional, and social problems generates feelings of fragility and insecurity, negatively reflecting on the performance of functions. The interaction between these factors affects the perception of health in the elderly, which may influence their quality of life[29].

Satisfaction with health may be related to several factors such as independence, autonomy, and seeking to behave and live fully30. When evaluating the perception of health by the elderly, they often take into account the correlation between quality of life and aspects of health, understanding, above all, that health is not only understood as the absence of disease. Among elderly individuals, having a disease under control or being able to take medication, performing activities related to health, leisure, and work refer to the possibility of maintaining autonomy and connection to their previous life experiences31. The health perception variable showed a significant association between all domains of the WHOQOL-brief and the total score of the questionnaire (Table 4).

Elderly people with a greater number of diseases have worse quality-of-life indices. The low score in the physical component in individuals with chronic diseases may be related to pain, discomfort, dependence on the use of medication, and the need for treatment of the disease in health services. Furthermore, the existence of comorbidities can contribute to the emergence of negative feelings, also affecting the psychological domain[30]. In this study, the association of the presence of comorbidities with the physical and psychological domains was marginally significant (Table 5).

It is known that a large portion of the elderly live with chronic health problems, making them consumers of a large number of medications, and are regular users of pharmaceutical assistance services[32].

However, with the high consumption of medicines, both government costs and individual costs increased, as medicines are not always found in public health services. The 2008 Household Sample Survey found that only 45.3% of prescription drugs were dispensed in public services. Thus, in addition to economic difficulties, there are difficulties towards access, which include the lack of knowledge of where and how to acquire the drugs, and the elderly population's difficulty in moving, which contributes to worse quality-of-life rates[33]. In this study, the worst quality-of-life indices measured by the WHO-QOL-brief in the physical and psychological domains were obtained among individuals who reported getting their medication in public health units (Table 6).

Health perception was the variable that remained in the final logistic regression model (Table 7). Self-rated health is influenced by several essential aspects of the elderly's life, such as gender, age, marital status, education, monthly household income, and physical activity[34].

Health conditions are also another factor that can contribute to the improvement or worsening of the perceived health and well--being index. Falls, degree of dependence for activities of daily living (ADLs), depressive

symptoms, chronic diseases and morbidities, amount of medication taken daily, and the use of health services are factors that influence these indicators[34].

Therefore, the perception of the patients' health status and quality of life, as well as the impact of the disease and its respective treatment allows for the planning of intervention strategies, as they provide important information about the user, allowing them to identify their priorities and support programs to implement more effective care actions[6].

CONCLUSION

This study showed a population with a mean age of 74.59 years old (SD=9.08), mostly female (89.41%), widowed (44.71%), retired (71.76%); with up to 03 comorbidities (77.65%); had hypertension (69.41%), followed by increased cholesterol (45.88%) and diabetes (27.05%); using polypharmacy (5 or more drugs) (49.41%); and a therapeutic complexity index measured by MRCI ranging from 2.5 to 48 points, a mean of 19.25 points, and standard deviation of 10.28 points.

Adherence to treatment according to the Morisky-Green test was high for 35.29% of the participants in this study, the intermediate for 50.59%, and low for 14.12%; and non-adherent individuals had an intermediate and low adherence totaling 64.71% of the participants.

The total score of the WHOQOL-brief, an instrument used to assess quality of life among the elderly, was 66.3 (SD= 10.1). Among the instrument's domains, the lowest mean values were 64.8 (SD= 13.3) in the environmental domain, followed by 67.1 (SD= 14.9) in the physical domain. The highest mean value was 75.5 (SD= 13.5) in the social aspect domain.

In the joint analyses it was found that women, with more than three comorbidities, with a high therapeutic complexity and a poor health perception had the lowest average, especially in the physical domain of the WHOQOL-brief. The variable health perception was maintained in the logistic regression model, where in each category in which it increases, the quality of life increases by 04 units.

The results of this study highlighted that characteristic related to the female gender, the presence of diseases, the therapeutic complexity, and the perception of poor health are associated with lower quality-of-life indices in this population of elderly individuals who go to the Nossa Senhora do Rosário Social Center.

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