Meanings of "being happy in old age" and perceived quality of life according to Brazilian older adults

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Abstract

Objective: Identifyting associations between meanings of "being happy in old age" and perceived quality of life in a sample of community-dwelling older adults. *Methods:* Data were drawn from the baseline (BL; 2008-2009) and follow up (FW; 2016-2017) records of the Fibra Campinas, a population-based study on frailty in old age. Two hundred and eleven individuals with an average age of 81.0±4.3 at follow-up, answered to an open question on happiness in old age at baseline and to the CASP-19 at follow-up. BL records were submitted to content analysis; those of FW to measures of frequency, position and dispersion, and both to logistic regression analyzes. *Results*: The content analysis generated four themes: health and functionality (the most mentioned), psychological well-being, interpersonal relationships and material resources. The most cited categories were self-development and family relationships. High scores in CASP-19 prevailed and were more likely among participants who did not mention material resources (OR=2.44; 95%CI: 1.20-4.43), nor health and functionality (OR=2.03; 95%CI: 1.22-4.22), and among those who cited interpersonal relationships (OR=1.92; 95%CI: 1.08-3.41) at BL. High scores in the factor Self-Realization/Pleasure were more likely among those aged 80-84 (OR=1.93; 95%CI: 1.01-3.68) and among those who did not mention health and functionality (OR=1.98; 95%CI: 1,00-1.98) at BL. *Conclusion:* Happiness in old age and quality of life related to psychological needs of control, autonomy, self-realization and pleasure are related constructs, whose evaluation captures experiences that exceed material and health conditions, predominant in classic measures of quality of life.

Keywords: Happiness. Healthy Aging. Longevity. Quality of Life.

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INTRODUCTION

Happiness is a multidimensional construct, identified with objective conditions such as health, independence, material resources, family support and social relationships, as wll as with subjective conditions such as life satisfaction, sense of purpose, sense of autonomy, and spirituality. Among the components of happiness most cited by older people are family relationships, social relationships and social support, and self-fulfillment, self-acceptance, feeling good about oneself, adapting to current conditions and satisfaction with life. In the same way as the objective-subjective dichotomy, the concepts of hedonism (search for pleasure and avoidance of suffering) and eudaimonism (search for personal excellence) explain older people's conceptions of happiness in old age[1-10]. As have been shown by research with similar objectives subjective and eudaimonic elements prevail over objective and hedonic elements in the older person's assessment of happiness in old age[1,11,12]. For women, happiness is mainly to enjoy being with the family, maintaining affectionate relationships and participating in social activities[13]. As reported by Diener's review studies[10,13], men more than women cite the maintenance of capacities that allow them to maintain independence and autonomy and have the resources to meet their needs. The importance given to subjective and eudaimonic elements tends to remain and act as a protective resource, in the face of the decline associated with the aging process[14].

Cross-cultural research has discussed the issue of the universality of meanings of happiness and concluded that there are cross-cultural differences regarding the priorities of older people in terms of happiness, but not regarding the essence of the concept or aspirations[11,12,15]. For example, old people interviewed in Taiwan (China) indicated as sources of happiness: gratification of the need for respect, harmony in interpersonal relationships, fulfillment at work, taking life with ease, and deriving pleasure from living with others. Other themes cited by them are identical to those found in Western samples: material resources, self-fulfillment, pleasure and positive affect, and health[16]. A Korean study identified self-fulfillment, belonging, mission, social recognition, enjoyment, material success, and parenting as sources of happiness[17]. Latino seniors living in the US valued harmonious social relationships, family unity, and faith/religion, physical health, self-esteem, open communication with family and friends, and financial security[18]. In Palestine, aged people highlighted: sense of well-being, good physical and mental health, positive feelings, independence, purpose in life, contentment, and financial security[19]. An exception was observed in a sample of aged Chinese people who experienced periods of hunger in childhood and who presented quantity and quality of food as the main sources of happiness in old age, suggesting that certain types of experiences that test the limits of human dignity can cause changes in vital priorities[20].

Happiness, quality of life, positive mental health, satisfaction with life, and psychological well-being are related terms or part of the same conceptual universe that can be defined as of the conditions that allow a life or old age worth living. The decision to use one or the other of these terms depends on the theoretical traditions to which investigations or interventions are affiliated, not on differences in the meaning of the terms or the methodologies used to investigate them. Thus, in Psychology, happiness and psychological well-being predominate; in Social Sciences, the most commontermes are life satisfaction and subjective well-being. In Epidemiology, predominante the terms quality of life, quality of life in health, and positive mental health. Eventually, several of these terms are used at the same time, as in a Canadian study published in 2020, linked to a positive mental health epidemiological surveillance effort. This study used five indicators that proved to be related but independente variables: mental health self-assessment, happiness, life satisfaction, psychological well-being, and social well-being[21].

Boggatz[22] produced a conceptual analysis of the quality of life in old age construct, as shown in 208 articles published between 1992 and 2013. Three central concepts were derived from this analysis: (a) satisfaction of living conditions (objective living conditions of an aged person considered relevant to a good life and successful old age, such as financial status, health and functionality), (b) general subjective well-being (or hedonic well-being, indicated by life satisfaction) and (c) sense of completeness in relation to the main dimensions

of human life (of a eudaimonic nature), such as the search for personal growth, self-knowledge, self-acceptance, control, autonomy, positive relationships with others, and purpose. Van Leween et al.[23] analyzed data from 48 qualitative studies on the opinions of more than 3,400 aged people from 11 Western countries and derived 11 quality of life categories: autonomy, role and activity, health perceptions, social relationships, attitudes and adaptation, emotional comfort, spirituality, home and neighborhood, and financial security.

Aiming to build a quality of life scale for use in large longitudinal studies, Hyde et al.[24] developed a scalar measure of perceived quality of life, on the basis of a psychological construct translated into four cognitive-motivational dimensions designated by the acronym CASP-19 (control, autonomy, self-fulfillment, and pleasure, operationalized by a 19-item Likert scale. The four dimensions were theoretically assumed as ontological needs, that is, inherent to the Human Being. According to the authors, a perceived quality of life scale should not refer to physical health, functionality, and material conditions, because these variables are contextual, not constitutive elements of the construct. Originally produced in English, the scale was translated into Portuguese, submitted to semantic-cultural validation for use in samples of Brazilian adults aged 55 years and over, and submitted to psychometric studies that identified evidence of construct validity and convergent validity[25].

The subjective and eudaimonic aspects of the aging experience have the potential to act as protective resources and as motivational resources oriented towards self-care and self-education, in face of the increasing losses and adversities associated with longevity. As far as we know, are unknown data on the relationship between measures of perceived quality of life and meanings of happiness in old age with samples of Brazilian aged people.

This study was aimed to identifying associations between meanings attributed to the concept "being happy in old age" assessed at baseline (2008-2009), and perceived quality of life assessed at follow-up (2016-2017), in a sample of aged people recruited from the community.

METHODS

The data were derived from records contained in the baseline (2008-2009) and follow-up (2016-2017) databases of the Fibra Campinas Study, a population-based survey with repeated measures, whose objectives were to collect data on frailty and investigate associations between this geriatric syndrome with sociodemographic, health, functionality and psychosocial variables. The baseline sample (N=900) was composed from a random selection of 90 among 900 urban census tracts in Campinas, SP, Brazil, in whose households people aged 65 years and over were recruited, in gender and age quotas (65-69, 70-74, 75-79 and 80 years and over) representative of the resident population in each of the five health districts of the city[26]. The follow-up sample included those baseline study survivors who were located in the available adresses, and who answered to the CASP-19 perceived quality of life scale[27].

The flow of decisions taken to select the study participants reported here was as follows: (a) In the baseline database of the Fibra Campinas Study (2008-2009; N=900 participants aged 65 years and over), exclusion of 211 individuals who had cognitive deficit suggestive of dementia indicated by a score lower than the cutoff score on the Mini-Mental State Examination, adjusted for years of schooling[28,29]. (b) Among the 689 older people who remained in the baseline sample, 18 who had no record of answers about happiness in old age were excluded. (c) Study of the Fibra Campinas follow-up database (2016-2017) to know how many among the 671 older people with complete data on the meaning of happiness in old age at baseline had records of responses to the CASP-19 perceived quality of life scale in the follow-up. By this criterion, 324 older people were selected. One hundred and thirty losses due to death and 247 due to non-location were identified. (d) Among the 324 old survivors, 83 were excluded for having a score lower than the cutoff score in the cognitive test[26,27]. (e) Among the 241 older people who remained in the sample, 30 who did not answer to all items of the CASP-19 were excluded. Thus, the sample for this study consisted of 211 older adults aged 74 years and over.

The variables and measures involved in this investigation were as follows: (a) Meanings attributed to the concept "being happy in old age", in the presence of an open item that asked about it, in the baseline[27]. (b) Perceived quality of life indicated by the CASP-19 applied in the follow-up[28]. (c) Gender and age: the older person could answer male or female and should name the day, month and year of their birth. The reference age was that informed at follow-up.

The perceived quality of life was assessed using the CASP-19, an acronym for control, autonomy, self-fulfillment and pleasure, which designates a scale of 19 items that express non-hierarchical basic psychological needs. These are considered ontological by Hyde et al.[24], with potential to guide personality and development. The items are Likert type, anchored by four intensities (0=nothing, 1=a little, 2=a lot, and 3=very much). The total score ranges from 0 to 57[24,25].

Exploratory and confirmatory factor analyzes of the content of the CASP-19 translated and culturally adapted to Portuguese revealed a structure of latent meanings expressed in two factors, which were considered in this study: factor 1 - Self-fulfillment and Pleasure and factor 2 - Control and Autonomy[25].

The Mann-Whitney, Kruskal-Wallis and Dunn tests were used to compare the frequency distributions of scores on the CASP-19 total scale and its two factors, as previous normality tests demonstrated that the data were non-parametric. As the CASP-19 does not have cutoff scores decided by statistical criteria, nor are its results comparable to golden standards, the establishment of performance levels on the scale is normally done based on the scores obtained by the samples themselves. In this study, we used as a criterion the median value of the distributions of scores on the total scale and on the two-factor items. The frequencies of participants with scores above and below the median of each distribution were compared, considering the meanings of happiness in old age, gender and age.

The meanings of "being happy in old age" were obtained in an interview situation, asking the participants to speak freely about the subject. The responses were recorded on the survey form and then transcribed to the database[26]. The corpus formed by the textual records of oral responses was submitted to content analysis and category counting, for comparison with data from CASP-19.

Content analysis is a categorical and inferential technique for analyzing communication, which uses systematic and objective procedures for the description, classification, quantification, and qualification of messages. Any complete and intelligible issue, with any length or level of linguistic complexity, in response to the open question was considered as a unit of analysis. Category was defined as a class of meanings that share at least one common element, which differentiates them from another class; the themes, as above-ordered concepts that bring together a set of categories[30,31].

The analysis was carried out by three researchers who were informed about the method and the objectives, and were aware of the results of similar research[4,5]. First working independently and then together, the analysts derived four themes and 11 categories of meaning, supported by the concepts of hedonic and eudaimonic well-being[1] and by the Ryff's theoretical model of psychological well-being[14,32]. Data were translated into occurrence and non-occurrence records of the categories abstracted from each participant´s response, and were submitted for counting. The analysts worked under demand of 100% of inter-examiner agreement. Pearson's chi-square and Fisher's exact tests were used to compare frequencies of categorical variables produced by content analysis.

Univariate and multiple logistic regression analyses, which adopted the *step-wise* method of variable selection, were used to verify the associations between the variables of interest. The results of the statistical tests were considered significant for a value of $p<0.05$. Statistical analyzes were performed using SAS (Statistical Analysis System), version 9.4., and SPSS, version 21.0 packages.

Participants signed an informed consent form regarding the objectives, procedures and ethical commitments of the team, in both measurement times. The projects were approved by the Ethics Committee of the State University of Campinas, Brazil, under the permits No 20/8/2007, of 5/22/2007 and No 1.332.651, of 11/23/2015. The

project for this study was approved on 11/05/2019, under the permit No 3.684.200.

RESULTS

The sample consisted of 60 men and 151 women with an average age of 81.0±4.3 years at follow-up; the largest age group was that with 80 to 84 years. Content analysis on the concept "being happy in old age" identified four themes: health and functionality, psychological well-being, interpersonal relationships and material resources, and 11 categories subordinate to them (Table 1).

Table 2 presents data on sociodemographic variables, frequency of responses in the categories of meaning of happiness in old age, and values of medians, means and interquartile distances in the CASP-19, and in its factors Self-Accomplishment/Pleasure and Control/Autonomy. The categories of meaning of the concept "being happy in old age" with the highest frequency of occurrences were physical health, family relationships, self-development, and satisfaction and pleasure. Cognition and religiosity/spirituality were the less frequent. In the psychological well-being theme, the three categories related to eudaimonic well-being stood out (68.0% of the mentions), which surpassed in frequency those related to hedonic well-being (satisfaction and pleasure). The values of means and medians in the CASP-19 and in both factors of the scale were high.

Table 1. Themes and categories of the concept "being happy in old age" (n=211). Campinas, Brazil, 2020.

Theme 1. Health and functionality
Categories: 1.1. Physical health. Health status translated into medical diagnoses, signs, and symptoms; healthy lifestyles. E.g.: Take care of yourself.
1.2. Activity. Vital involvement, social participation, productivity, and energy. E.g.: having the will and strength to work.
1.3. Independence and autonomy. Physical and mental capacity that allows control over the environment; self-government, and self-determination. E.g.: Doing what you want, without any help.
1.4. Cognition. Preserved basic cognitive functions, allowing for problem solving, insight, reasoning, judgment, and autonomy. E.g.: I didn't want to lose my memory.
Theme 2. Psychological well-being
Categories: 2.1. Satisfaction and pleasure. Products of the sense that one has a good and happy life, in accordance with personal and social values, and expectations. E.g.: Have and joy, family.
2.2. Religiousness and spirituality. The sacred and the transcendent as sources of existential meaning and sense of belonging, and as coping resources. E.g.: First and foremost serve God.
2.3. Emotion-based coping. Management of stressful situations through cognitive-emotional strategies that protect self-esteem and save personal resources. E.g.: Being okay with yourself.
2.4. Self-development. Investments in self-knowledge and self-acceptance; seeking for personal excellence, purpose, and sense of self-fulfillment. E.g.: Learning to deal with difficulties.
Theme 3. Interpersonal relationships
Categories: 3.1. Family relationships. The family nucleus as a source of recognition, belonging, appreciation, respect, protection, affection, security, support, and satisfaction. E.g.: United family.
3.2. Social relationships. The group as a source of recognition, belonging, appreciation, protection, affection, security, and satisfaction. E.g.: It's about living well.. loving, living well with friends.
3.3. Social support. Relationships of giving and receiving affection, material goods, information, instrumental help, and help in solving problems. E.g.: It's about having a person who takes care of us, being able to take care of us.
Theme 4. Material resources
Possession of money, objects and opportunities that facilitate the achievement of well-being, in accordance with individual and social values. E.g.: Money to go to the doctor, to eat, to buy medicine.

Table 2. Descriptive summary of the sample (n=211). Campinas, Brazil, 2020.

	n (%)	Means (standard deviations)	Medians	Interquartile distances
Gender				
Male	60 (33.2)			
Female	151 (66.8)			
Age (years)		81.0 ± 4.3	81.0	6.0
70-79	71 (33.7)			
80-84	97 (46.4)			
≥ 85	42 (19.9)			
Occurrences of meaning categories of "being happy in old age"				
T1. Health and functionality				
C1.1. Physical health	122 (56.2)			
C1.2 Activity	40 (18.4)			
C1.3. Independence/autonomy	48 (22.2)			
C1.4. Cognition	7 (3.2)			
T2. Psychological well-being				
C2.1. Satisfaction and pleasure	66 (32.0)			
C2.2. Religiosity/spirituality	29 (14.1)			
C2.3. Emotion-based coping	42 (10.4)			
C2.4. Self development	69 (33.5)			
T3. Interpersonal relationships				
C3.1. Family relationships	80 (41.5)			
C3.2. Social relationships	54 (28.0)			
C3.3. Social support	59 (30.5)			
T4. Material resources	56 (26.5)			
Older people according to perceived quality of life score				
Total CASP-19 scale		40.2 ± 8.7	40.0	10.0
Score below the median	101 (47.8)			
Score above the median	110 (52.2)			
Factor 1: Self-fulfillment / Pleasure		26.6 ± 7.3	26.0	10.0
Score below the median	98 (46.4)			
Score above the median	113 (53.6)			
Factor 2: Control / Autonomy		4.4 ± 3.4	4.0	4.0
Score below the median	101 (47.8)			
Score above the median	110 (52.2)			

T = Theme; C = Category.

In the group that scored above the median on the CASP-19, there were a significantly higher frequency of participants who did not associate "being happy in old age" with health and functionality, or with material resources, than participants who did these associations. Among these, scoring below the median on the CASP-19 scale predominated. More seniors who scored high on the CASP-19 were observed among those who mentioned psychological well-being, satisfaction and pleasure, interpersonal relationships, family relationships, and social relationships, than those who did not mention these meanings. In this group, participants with scores lower than the median on the CASP-19 predominated. These relationships were repeated for the associations between the self-fulfillment and pleasure factor of the CASP-19 and the meanings health and functionality, material resources, satisfaction and pleasure, social relationships, and social support. There were more older people aged 80 to 84 years than 85 years and more with scores above the median in the self-fulfillment and pleasure factor. Among the latter predominated lower scores in the factor (Table 3).

Table 3. Associations between scores higher than the median on the CASP-19, considering the meanings of "being happy in old age", and gender and age of the participants (n=211). Campinas, Brazil, 2020.

Variables	n (%)	CASP-19 Scale		Factor 1. Self-fulfillment/ Pleasure		Factor 2. Control/ Autonomy	
		≤ 39.0 (n=101)	≥ 40.0 (n=110)	≤ 25.0 (n=98)	≥ 26.0 (n=113)	≤ 3.0 (n=101)	≥ 4.0 (n=110)
Meanings of "being happy in old age"							
T1. Health and functionality		*p*= **0.033**		*p*= **0.038**		*p*= 0.383	
No	69 (32.7)	33.3	66.7	36.2	63.8	52.2	47.8
Yes	142 (67.3)	54.9	45.1	51.4	48.6	45.8	54.2
C1.1. Physical health		*p*= 0.065		*p*= 0.226		*p*= 0.132	
No	89 (42.2)	40.0	59.6	41.6	58.4	53.9	46.1
Yes	122 (57.8)	53.3	46.7	50.0	50.0	43.4	56.6
C1.2. Activity		*p*= 0.515		*p*= 0.364		*p*= 0.450	
No	171 (81.0)	46.8	53.2	47.9	52.1	49.1	50.9
Yes	40 (19.0)	52.5	47.5	40.0	60.0	42.5	57.5
C1.3. independence/autonomy		*p*= 0.099		*p*= 0.923		*p*= 0.748	
No	163 (77.2)	44.8	55.2	46.6	53.4	48.5	51.5
Yes	48 (22.7)	58.3	41.7	45.8	54.2	45.8	54.2
C1.4. Cognition		*p*= 0.056		*p*= 0.051		*p*= 1.000	
No	204 (96.7)	46.6	53.4	45.1	54.9	48.0	52.0
Yes	7 (3.3)	85.7	14.3	85.7	14.3	42.9	57.1
T2. Psychological well-being		*p*= **0.006**		*p*= 0.127		*p*= 0.598	
No	113 (53.5)	56.6	43.4	51.3	48.7	49.6	50.4
Yes	98 (46.5)	37.8	62.2	40.8	59.2	45.9	54.1
C2.1. Satisfaction and pleasure		*p*= **0.004**		*p*= **0.048**		*p*= 0.172	
No	145 (68.7)	54.5	45.5	51.0	49.0	51.0	49.0
Yes	66 (31.3)	33.3	66.7	36.4	63.6	40.9	59.1

to be continued

Continuation of Table 3

Variables	n (%)	CASP-19 Scale		Factor 1. Self-fulfillment/ Pleasure		Factor 2. Control/ Autonomy	
		≤ 39.0 (n=101)	≥ 40.0 (n=110)	≤ 25.0 (n=98)	≥ 26.0 (n=113)	≤ 3.0 (n=101)	≥ 4.0 (n=110)
Meanings of "being happy in old age"							
C2.2. Religiosity/spirituality		*p*= 0.724		*p*= 0.832		*p*= 0.724	
No	182 (86.3)	48.3	51.7	46.1	53.8	48.3	51.7
Yes	29 (13.7)	44.8	55.2	48.3	51.7	44.8	55.2
C2.3. Emotion-based coping		*p*= 0.703		*p*= 0.861		*p*= 0.757	
No	169 (80.0)	48.5	51.5	46.7	53.2	47.3	52.7
Yes	42 (20.0)	45.2	54.8	45.2	54.7	50.0	50.0
C2.4. Self-development		*p*= 0.077		*p*= 0.138		*p*= 0.993	
No	142 (67.3)	52.1	47.9	50.0	50.0	47.9	52.1
Yes	69 (32.7)	39.1	60.9	39.1	60.9	47.8	52.2
T3. Interpersonal relationships		*p*= **0.011**		*p*= 0.120		*p*= 0.820	
No	102 (48.3)	56.9	43.1	52.0	48.0	47.1	52.9
Yes	109 (51.7)	39.4	60.6	41.3	58.7	48.6	51.4
C3.1. Family relationships		*p*= **0.038**		*p*= 0.142		*p*= 0.628	
No	131 (62.1)	53.4	46.6	50.4	49.6	46.6	53.4
Yes	80 (37.9)	38.7	61.3	40.0	60.0	50.0	50.0
C3.2. Social relationships		*p*= **0.031**		*p*= **0.025**		*p*= 0.190	
No	157 (74.4)	52.2	47.8	51.	49.0	45.2	54.8
Yes	54 (25.6)	35.2	64.8	33.3	66.7	55.6	44.4
C3.3. Social support		*p*= 0.108		*p*= **0.023**		*p*= 0.703	
No	152 (72.0)	51.3	48.7	51.3	48.7	48.7	51.3
Yes	59 (28.0)	39.0	61.0	33.9	66.1	45.8	54.2
T4. Material resources		*p*= **0.025**		*p*= 0.212		*p*= 0.709	
No	155 (73.5)	43.2	56.8	43.9	56.1	47.1	52.9
Yes	56 (26.5)	60.7	39.3	53.6	46.4	50.0	50.0
Gender		*p*= 0.486		*p*= 0.206		*p*= 0.599	
Male	60 (28.4)	51.7	48.3	53.3	46.7	45.0	55.0
Female	151 (71.5)	46.4	53.6	43.7	56.3	49.0	51.0
Age (years)		*p*= 0.228		*p*= **0.033**		*p*= 0.377	
70-79	71 (33.8)	53.5	46.5	50.7	49.3	43.7	56.3
80-84	97 (46.2)	41.2	58.8	37.1	62.9	47.4	52.6
≥ 85	42 (20.0)	52.4	47.6	59.5	40.5	57.1	42.9

T = Theme; C = Category; Statistically significant difference between groups if *p*-value <0.05, for Pearson's chi-square test.

According to the univariate logistic regression analysis, the participants who mentioned the themes health and functionality, and material resources were less likely to score above the median on the CASP-19 than those that did not mention these themes.Those who mentioned psychological well-being, satisfaction and pleasure, interpersonal relationships and family relationships were more likely to score above the median on the scale. According to data from the multiple logistic regression analysis, older people who did not mention material resources or health and functionality were more likely to score above the median on the CASP-19 than those who mentioned these meanings. Older people who mentioned interpersonal relationships were more likely to score above the median on the CASP-19 than those who did not (Table 4).

Univariate logistic regression analysis for associations between scores above the median in the self-fulfillment/pleasure factor and the meanings of "being happy in old age" revealed results similar to those obtained for the total scale. Compared with older people who did not mention it, those who mentioned social relationships, health and functionality, and satisfaction and pleasure had a greater chance of scoring above the median in the items of the self-fulfillment/pleasure factor. The multiple logistic regression analysis showed significant associations between scores above the median in the self-fulfillment and pleasure factor and the presence of mentions of social support, absence of mentions of health and functionality, and age from 80 to 84 years (Table 5). Regression analyzes were performed for factor 2 of the CASP-19 (control/autonomy), without statistically significant results.

Table 4. Logistic regression analyzes of scoring above the median on the CASP-19, meanings of "being happy in old age", and participants´s gender and age (n=211). Campinas, Brazil, 2020.

Variables	Univariate logistic regression analysis			Multiple logistic regression analysis		
Meanings of "being happy in old age"	*OR	**95% CI OR	*p*-value	*OR	**95% CI OR	*p*-value
T1. Health and Functionality						
No	1.00	---	---	1.00	---	---
Yes	0.41	0.23-0.75	**0.004**	0.44	0.24-0.82	**0.010**
T2. Psychological Well-Being						
No	1.00	---	---			
Yes	2.15	1.24-3.74	**0.007**			
T3. Interpersonal relationships						
No	1.00	---	---	1.00	---	---
Yes	2.02	1.17-3.50	**0.012**	1.92	1.08-3.41	**0.027**
T4. Material resources						
No	1.00	---	---	1.00	---	---
Yes	0.49	0.26-0.92	**0.026**	0.43	0.23-0.83	**0.012**
C1.1 Physical health						
No	1.00	---	---			
Yes	0.60	0.34-1.04	0.066			
C1.2 Activity						
No	1.00	---	---			
Yes	0.80	0.40-1.59	0.515			
C1.3 Independence/autonomy						
No	1.00	---	---			
Yes	0.58	0.30-1.11	0.101			
C1.4 Cognition						
No	1.00	---	---			
Yes	0.15	0.02-1.23	0.077			

to be continued

Continuation of Table 4

Variables	Univariate logistic regression analysis			Multiple logistic regression analysis		
Meanings of "being happy in old age"	*OR	**95% CI OR	*p*-value	*OR	**95% CI OR	*p*-value
C2.1 Satisfaction and pleasure						
No	1.00	---	---			
Yes	2.39	1.30-4.39	**0.005**			
C2.2 Religiosity/spirituality						
No	1.00	---	---			
Yes	1.15	0.52-2.53	0.724			
C.2.3 Coping/emotion						
No	1.00	---	---			
Yes	1.14	0.58-2.25	0.704			
C.2.4 Self-development						
No	1.00	---	---			
Yes	1.69	0.94-3.04	0.078			
C3.1 Family relationships						
No	1.00	---	---			
Yes	1.81	1.03-3.19	**0.039**			
C3.2 Social relations						
No	1.00	---	---			
Yes	2.01	1.06-3.82	**0.032**			
Gender						
Male	1.00	---	---			
Female	1.24	0.68-2.25	0.486			
Age (years)						
70-79	1.00	---	---			
80-84	1.64	0.89-3.04	0.116			
≥ 85	1.05	0.49-2.25	0.907			

T = Theme; C = Category. OR* = odds ratios for high scores: 110 with a score above the median and 101 with a score below the median. 95% CI OR** = 95% confidence interval for the odds ratio; p-value for Wald test statistically significant if p <0.05.

Table 5. Logistic regression analyzes of scoring above the median in Factor 1 (Self-fulfillment/Pleasure) of CASP-19, meanings of "being happy in old age", and participants´gender and age. Campinas, Brazil, 2020.

Variables	Univariate logistic regression analysis			Multiple logistic regression analysis		
	*OR	**95% CI OR	*p*-value	*OR	**95% CI OR	*p*-value
Meanings of "being happy in old age"						
T1. Health and Functionality						
No	1.00	---	---	1.00	---	---
Yes	0.54	0.30-0.97	**0.039**	0.51	0.27-0.95	**0.035**
T2. Psychological Well-Being						
No	1.00	---	---			
Yes	1.53	0.89-2.64	0.128			
T3. Interpersonal relationships						
No	1.00	---	---			
Yes	1.54	0.89-2.65	0.121			

to be continued

Continuation of Table 5

Variables	Univariate logistic regression analysis			Multiple logistic regression analysis		
	*OR	**95% CI OR	*p*-value	*OR	**95% CI OR	*p*-value
Meanings of "being happy in old age"						
T4. Material resources						
No	1.00	---	---			
Yes	0.68	0.37-1.25	0.213			
C1.1 Physical health						
No	1.00	---	---			
Yes	0.71	0.41-1.24	0.226			
C1.2 Activity						
No	1.00	---	----			
Yes	1.38	0.69-2.78	0.365			
C1.3 Independence/autonomy						
No	1.00	---	---			
Yes	1.03	0.54-1.97	0.923			
C1.4 Cognition						
No	1.00	---	---			
Yes	0.14	0.02-1.16	0.068			
C2.1 Satisfaction and pleasure						
No	1.00	---	---			
Yes	1.82	1.01-3.32	**0.049**			
C2.2 Religiosity/spirituality						
No	1.00	---	---			
Yes	0.92	0.42-2.01	0.831			
C.2.3 Coping/emotion						
No	1.00	---	---			
Yes	1.06	0.54-2.09	0.861			
C.2.4 Self-development						
No	1.00	---	---			
Yes	1.56	0.87-2.79	0.139			
C3.1 Family relationships						
No	1.00	---	---			
Yes	1.52	0.87-2.68	0.143			
C3.2 Social relations						
No	1.00	---	---			
Yes	2.08	1.09-3.97	**0.020**			
C3.3. Social support						
No	1.00	---	---	1.00	---	---
Yes	2.06	1.10-3.84	**0.024**	2.19	1.00-2.19	**0.019**
Gender						
Male	1.00	---	---			
Female	1.47	0.81-2.68	0.207			
Age (years)						
70-79	1.00	---	---	1.00	---	---
80-84	1.74	0.94-3.24	0.080	1.93	1.01-3.68	**0.047**
≥ 85	0.70	0.32-1.51	0.364	0.58	0.26-1.32	0.194

T = Theme; C = Category. OR* = odds ratios for high scores: 110 with a score above the median and 101 with a score below the median. 95% CI OR** = 95% confidence interval for the odds ratio; p-value for Wald test statistically significant if p <0.05.

DISCUSSION

We carried out a baseline and follow-up study investigating associations between the meanings attributed by the older people to the concept "being happy in old age", and the scores obtained by them in a measure of perceived quality of life (CASP-19). Older people who did not mention health and functionality or material resources at baseline were more likely to score high on the perceived quality of life scale at follow-up than those who mentioned these meanings. Those who cited interpersonal relationships were more likely to score high on the CASP-19 than those who did not. Participants who scored high on the self-fulfillment and pleasure factor were more likely to mention social support and not to mention health and functionality, and material resources. Associations were observed between high scores in the self-fulfillment and pleasure factor, absence of mentions of health and functionality, and material resources, presence of mentions of social support, and age from 80 to 84 years.

Participants manifested an understanding of the concept of happiness in old age as a condition that presents hedonic aspects (linked to the satisfaction of needs, the search for pleasure and the avoidance of suffering) and eudaimonic (linked to the search for personal excellence). They also showed that they value the eudaimonic aspects more than the hedonic aspects of the experiences of happiness and perceived quality of life, and that they perceive health, functionality, and material resources as aspects of well-being in old age, not as their only or critical facet, as the older people are commonly thought to think.

Elderly people who differentiate themselves by enjoying good physical and cognitive health for their age tend to overvalue their condition. Contact with others of the same age but physically and cognitively impaired can elicit compassion and help meet compensatory goals. In advanced ages, experiences of eudaimonic well-being reflected in psychological well-being, self-development, and spirituality gain prominence. Faced with the inevitable physical, cognitive and social decline that accompanies aging, family relationships and social support from a selected network of friends become increasingly important to the elderly. These notions about the data are in accordance with the theoretical literature[1,12,15,32,33] and with research on happiness[2,4,6,8,9,11], perceived quality of life[23,24], and well-being[2,5,10,13]. In this study, the importance given to interpersonal relationships would have been strengthened by the strong presence of women in the sample, data that are repeated in surveys with elderly people in different countries[8,9,12,15-17,32]. Another peculiarity of this study was the enhancement raised by the sense of self-fulfillment and pleasure factor and the emphasis given by the elderly to self-development, reinforcing the impression of superiority of eudaimonic reasons over hedonic ones in determining the adjustment of the elderly, replicating data from international research[12,17,19,33,34].

Circumstances of the Fibra Study design contributed to the differentiation of the sample, compared to other population-based studies: no participant had record of cognitive deficit suggestive of dementia and all responded to all items of two complex instruments, suggesting that they were healthier than those excluded by the cognitive criteria. Those who died between baseline and follow-up (37.5% of losses) were probably more frail and sicker than survivors. It is reasonable to assume that the non-location of a large part of the baseline participants owed this condition to the fact that they moved to their children's home or to long-term care facilities for older people (LTCF), due to illness, disability or widowhood.

Thus, a bias may have occurred due to the survival of participants with more robust health conditions. However, even accepting this hypothesis, the possibility that the sample harbors considerable heterogeneity within each age group should not be ruled out. Based on analyzes of large official databases in the United States and the database of one of the *Health and Retirement Study* waves, Lowski et al.[34] reported that 48% of the sample aged 51 to 54 years, 42% of those aged 65 to 69, 38% for those aged 70 to 75, 30% for those aged 80 to 84 and 28% for those aged 85 and over rated their health as excellent and very good. Between 51 and 54 years old, 96% were independent for all IADL (Instrumental Activities of Daily Living) and BADL (Basic Activities of Daily Living), a rate that went to 79% between 80 and 84 years and to 56% among 85 years and over. The

percentage of those diagnosed as having any of the five most prevalent chronic diseases in the US was 75% between 51 and 54 years, 50% between 65 and 69, and 35% between 80 and 84 years[34].

It should be noted that the sample was mostly female, which contributed to the higher frequency of mentions to the themes of interpersonal relationships, family relationships and psychological well-being than to the themes of material conditions and satisfaction and pleasure, while men tended to overvalue material resources and health and functionality. This is a trend observed in similar studies[8,9,12,16,18,20], due to genetic-biological, socioeconomic and gender factors.

If, on the one hand, the characteristics of the sample discourage broad generalizations, on the other, they created conditions for the observation of septuagenarians and octogenarians who had functioning patterns compatible with those of optimal or successful old age from a biomedical and psychological point of view. Their answers in the two measurement times reflect socially shared affective and cognitive values and meanings about happiness and quality of life in old age, in interaction with their living conditions and the way they lived and are living their old age. We do not reason as if the meanings observed at baseline could be considered as causes of the perceived quality of life scores assessed in the follow-up. Nor did we plan for the nine-year gap between the two measures, but we did plan to use it to better understand the interactions between the meaning of complex social concepts and subjective measures of quality of life in old age.

CONCLUSIONS

This baseline and follow-up study provides data on relevant aspects of the aging experience of septuagenarians and octogenarians, specifically on associations about quality of life referenced by psychological criteria and older people's conceptions of happiness in old age. It revealed that there are associations between the two sets of data, among which the most important are those led by issues of health and functionality, economic well-being, psychological well-being and hedonic and eudaimonic aspects, which are more valued by older people than those.

The data encourages the appreciation of the use of qualitative approaches in research on happiness, perceived quality of life and related issues. Likewise, it encourages the derivation of useful instruments for clinical, social and educational practices, and for the development of public policies centered on positive conceptions of aging. Of modifiable nature, they can be the target of theoretical and socially relevant research and interventions.

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RESPONSIBILITIES FOR AUTHORSHIP

AL Neri planned and coordinated the study, D Assumpção collaborated with the data analysis and CNA Valero and TFG Meira analyzed the data and prepared the first version of the manuscript, which was reviewed by AL Neri and D Assumpção.

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