

Morbidities, Self-reported Health, Purpose, and Satisfaction with Life in Older Adults

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Abstract: This study aims to estimate the prevalence of overall satisfaction with life regarding sense of purpose in life, morbidities, and self-reported health, and to identify their direct and indirect associations among the domains in community-dwelling older adults. The research has a cross-sectional design, and we evaluated 419 older adults. Morbidities were assessed using a dichotomous question; self-reported health and satisfaction with life were assessed using a 5-point Likert scale; and sense of purpose was assessed using the Ryff and Keyes 10-item scale. An analysis of structural equations was conducted using *Path Analysis*. The relationship between morbidities and overall satisfaction with life was mediated by self-reported health; purpose in life mediated the relationship between self-reported health and overall satisfaction with life. Beyond managing chronic illnesses, subjective assessments of health and well-being are key to successful aging.

Keywords: aging, quality of life, chronic illness, aged

Morbidades, Autoavaliação de Saúde, Propósito e Satisfação com a Vida em Idosos

Resumo: Este estudo teve como objetivo estimar a prevalência de satisfação global com a vida e referenciada a domínios, propósito de vida, morbidades e autoavaliação de saúde e identificar associações diretas e indiretas de morbidades, autoavaliação geral de saúde e propósito de vida com satisfação global com a vida em idosos comunitários. Trata-se de um delineamento transversal que avaliou 419 idosos. Morbidades foram avaliadas por questão dicotômica, autoavaliação de saúde e satisfação com a vida por escala tipo Likert de 5 pontos, e propósito pela escala de 10 itens de Ryff e Keyes. Utilizou-se análise de equações estruturais via análise de caminhos. A relação entre morbidades e satisfação global com a vida foi mediada pela autoavaliação de saúde; propósito de vida mediou a relação entre autoavaliação de saúde e satisfação global com a vida. Além do tratamento de doenças crônicas, avaliações subjetivas da saúde e bem-estar são essenciais para o envelhecimento bem-sucedido.

Palavras-chave: envelhecimento, qualidade de vida, doenças crônicas, idosos

Morbilidades, Autoevaluación de Salud, Propósito y Satisfacción con la Vida en Adultos Mayores

Resumen: Este estudio tuvo como objetivo estimar la prevalencia de satisfacción global con la vida y referenciada a los dominios propósito de vida, morbilidades y salud autoevaluada, e identificar asociaciones directas e indirectas de morbilidades, autoevaluación general de salud y propósito con la satisfacción general con la vida en adultos mayores comunitarios. Es un diseño transversal que evaluó a 419 adultos mayores. Las morbilidades se evaluaron mediante una pregunta dicotómica, la autoevaluación de salud y la satisfacción con la vida por la escala Likert de 5 puntos, y el propósito mediante la escala de 10 ítems de Ryff y Keyes. Se utilizó análisis de ecuaciones estructurales vía análisis de trayectoria. La relación entre morbilidades y satisfacción general con la vida estuvo mediada por autoevaluación de la salud; el propósito de vida medió la relación entre autoevaluación de salud y satisfacción general con la vida. Más allá del manejo de enfermedades crónicas, las evaluaciones subjetivas de salud y bienestar son clave para un envejecimiento exitoso.

Palabras clave: envejecimiento, calidad de vida, enfermedades crónicas, adultos mayores

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The ageing of the world population raises important reflections and challenges on quality of life at older ages. Knowing that the aging process might negatively affect the quality of life of older adults, investigating the determinants of a healthy aging has become a priority for researchers (Stephens, 2019). In this context, and based on the heterogeneity of the aging process, the term “successful aging” is based on Rowe and Kahn's theory (1997), which comprises three

important dimensions: absence of diseases and disabilities, maintenance of physical and cognitive abilities, and active engagement with life.

Beginning in the 20th century, subjective assessments of older adults on their well-being became the center of debate in public and economic policies (Steptoe, 2019). Satisfaction with life — one of the components of subjective well-being — represents a cognitive judgment that an individual makes about their own living conditions according to cultural and personal norms and to intended aspirations (Diener et al., 2018), and is one of the criteria for successful aging (Ji et al., 2015). Satisfaction with life is a predictor of longevity (Yorgason et al., 2018) and is associated with reduction in mortality (Steptoe, 2019).

Gerontological literature has robust data on the relationship between health and well-being. Health is a well-known predictor variable and is associated with satisfaction with life (Ngamaba et al., 2017). As result of longevity, the aging process can be accompanied by the presence of chronic diseases that can negatively affect the health status of older adults and, consequently, their satisfaction with life (Tavares, 2022). In addition to objective health data, perceived health also has a positive correlation with satisfaction with life (Dumitrache et al., 2019). Self-reported health is a way through which health perceptions can be measured in different populations and is widely used in health research (Lidström et al., 2017). In gerontology practice, measures to increase positive perceptions of one's own health should be encouraged to increase satisfaction with life among older adults. Evidence shows that self-reported health is associated with morbidities and satisfaction with life in older adults. Multimorbidities can negatively affect physical conditions in older adults, which can result in low ratings of self-reported health and satisfaction with life (Cimarras-Otal et al., 2014; Mavadatt et al., 2014).

The literature also shows associations between psychological variables and satisfaction with life. Purpose in life, one of the dimensions of psychological well-being, can be defined as a sense that life has meaning, direction, and intentionality, guiding goal setting and decision-making based on personal resources (Ryff, 1989). A sense of purpose can promote positive outcomes in health and well-being since it increases the level of satisfaction with life and reduces depressive symptoms (Laird et al., 2019). Gerontological literature indicates numerous associations between purpose of life and health outcomes. A review showed that high levels of purpose is associated with functional status maintenance, greater cognitive function, and increased physical activity. Among the psychosocial correlates of purpose in life, high levels of satisfaction with life were included (Irving et al., 2017).

Understanding the relationship between objective health, subjective health, purpose in life, and satisfaction with life — considering the context in which older adults live — can lead to a better understanding of subjective well-being in old age. Our study aims to estimate the prevalence of overall satisfaction with life in reference to purpose in life,

morbidities, and self-reported health, and to identify direct and indirect associations among the domains in community-dwelling older adults.

Method

This is a cross-sectional study based on secondary data from the registry of participants in follow-up interviews in the Frailty in Brazilian Older Adults (FIBRA) study carried out in 2016–2017, with baseline measurements obtained in 2008 and 2009.

Participants

Participants from the city of Campinas and from Ermelino Matarazzo, a district of the municipality of São Paulo (both in the state of São Paulo) were involved in the follow-up study. In the initial survey, these locations included 1,284 older adults aged 65 and older. In the follow-up study, 549 were located and interviewed at home, 192 had passed away, and 543 could not be found (Figure 1). Participants were informed about the objectives, procedures, and observed ethical principles, after which they were asked to sign an informed consent form.

Instruments

Sociodemographic variables: gender (man/woman), age (grouped into age ranges: 72–74; 75–79; 80–84; and 85 and older), and schooling (no schooling, 1 to 4 years of schooling, and 5 or more years of schooling).

Morbidities: subjects were asked whether, in the year prior to the interview, any physician had diagnosed them with one of the following diseases: heart disease, hypertension, cerebrovascular accident, diabetes mellitus, cancer, arthritis/rheumatism, lung diseases, depression, or osteoporosis (9 dichotomous items). For path analysis, the numerical variable was used, considering 0 to 6 morbidities.

Self-reported health: the answers encompassed a 5-items scale as alternatives (1 – very poor, 2 – poor, 3 – fair, 4 – good, and 5 – very good) to evaluate their general health, current health, and memory in comparison with others of the same age, and current health and current activity in comparison with the previous year. For path analysis, the numerical variable was used for overall self-reported health by adding up all domains, thus considering 9 to 25 points. The answers for each domain were categorized as follows: very poor/poor, fair, and good/very good. The internal consistency is 0.624.

Purpose in life: it was assessed through 10 statements that evaluated the extent to which the subjects agreed or disagreed with the statements (Ryff & Keyes, 1995). The scale was translated into and adapted for the Brazilian context (Ribeiro et al., 2020). Cronbach's alpha for the scale is 0.644. There were 5 possible answers: 1 – I completely disagree; 2 – I agree very little; 3 – I quite agree; 4 – I strongly agree; and 5 – I completely agree. For path analysis, this was

categorized as a numerical variable, ranging from 15 to 48 points (≤ 27 – low; 28-32 – medium; ≥ 33 – high).

Indicators of satisfaction with life: overall satisfaction and satisfaction regarding different domains were assessed; these included satisfaction with life, health, memory, friendships, family relations, and with the environment in which they live. Each item had 5 possible answers: 1 – very little; 2 – little; 3 – more or less; 4 – very satisfied; and 5 – extremely. The sample mean for each item was calculated, and the number of answers on each intensity was tabulated. For path analysis, the numerical variable was used for overall self-reported health by adding up all domains ranging from 10 to 30 points. Answers for each domain were categorized as follows: very little/little; more or less; and very satisfied/extremely (Neri, 2002). Cronbach’s alpha for the scale is 0.741.

Procedures

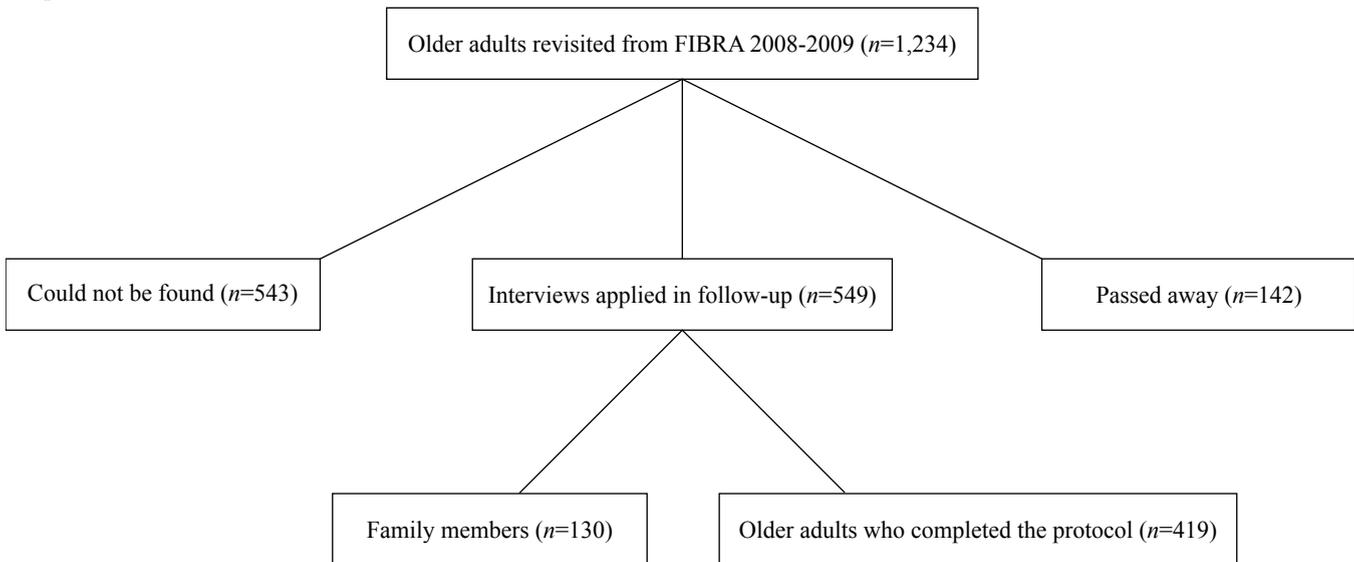
Data collection. For this study, data were collected at home by two trained interviewers working together. Before the interview, researchers explained the character of the research and all the related procedures to the participant and to a family member; their participation was conditioned on the signing of an informed consent form (ICF). Older adults

who had memory, attention, communication, spatial or time orientation deficits, suggestive of cognitive impairment; who had permanent or temporary inability to ambulate (except those who were already using mobility aids); who had limb weakness or aphasia as a consequence of stroke; who had severe motor, speech, or affection impairment associated with late-stage Parkinson’s disease; who had severe hearing or visual impairment; or who were facing an end-stage disease were excluded from the study. One of the interviewers surveyed informative and sociodemographic data, chronic conditions and signs and symptoms, while the other interviewer applied the Mini-Mental State Examination (MMSE) (Brucki et al., 2003; Folstein et al., 1975), which is a brief battery of mental status assessments; assessed frailty; took anthropometric measurements; and checked the blood pressure of the participant. If the participants achieved scores above cutoff point for dementia in the MMSE, they were subjected to the other measurements in the form (self-reported), which was related to health state, activity, functional independence, social participation, affection, and psychosocial variables.

Older adults who scored above the cutoff score in the MMSE and fully completed the protocol were included in the study ($n = 419$). Figure 1 shows the sample flowchart:

Figure 1

Sample Flowchart. São Paulo, Brazil, 2017



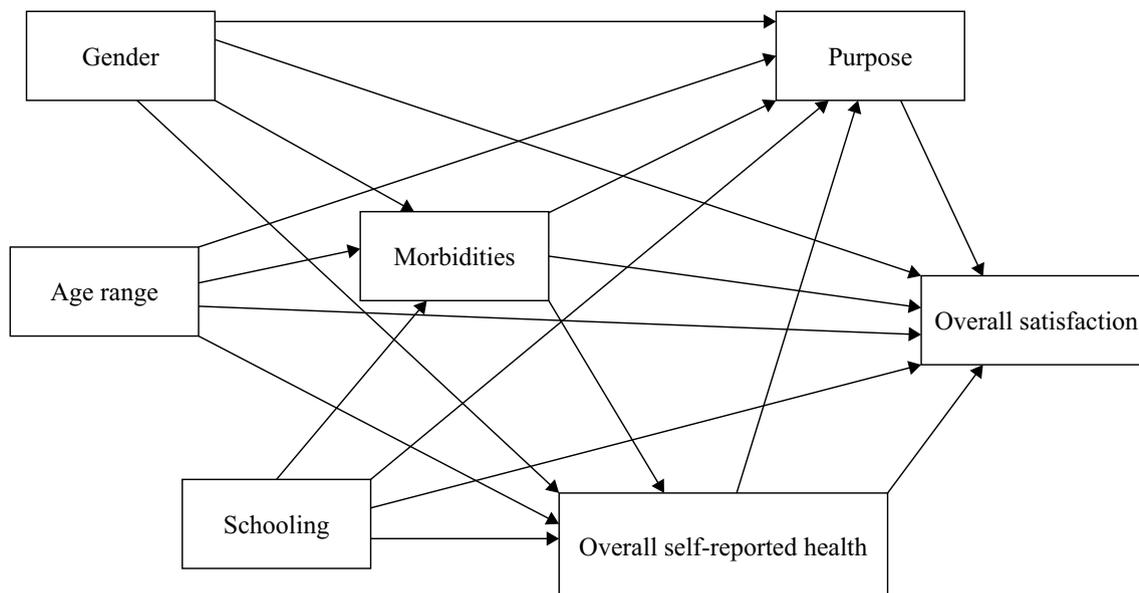
Note. n = sample.

Data analysis. A descriptive analysis for characterizing the sample was conducted from absolute and relative frequency measures for categorical variables, and from mean, median, and standard deviation for quantitative variables. To study the relationship between the variables of interest according to the previous theoretical model (Figure 2), an analysis of structural equations via path analysis was used. Figure 2 shows the theoretical model used to study the relationship between the variables of interest. The tests and the values for acceptance

were Chi-Square test for goodness of fit > 0.05 ; Chi-Square ratio (χ^2/GL) < 2 ; SRMR (*Standardized Root Mean Residual Square*) ≤ 0.10 ; RMSEA (*Root Mean Square Error of Approximation*) ≤ 0.08 ; CFI (*Comparative Fit Index*) ≥ 0.90 ; and TLI (*Tucker-Lewis Index*) ≥ 0.90 . To analyze the fit of the data to the proposed paths, significance tests for path coefficients were performed. Absolute values of $t > 1.96$ indicate that the path has a statistically significant coefficient. The data analysis was made using Stata software tool version 15.0.

Figure 2

Hypothetical Model for Morbidities, Overall Self-reported Health, Purpose, and Overall Satisfaction With Life. São Paulo, Brazil, 2017



Ethical Considerations

This study was approved by the Research Ethics Committee of the Universidade Estadual de Campinas, CAAE No. 16559119.7.0000.5404, opinion No. 3.502.189.

Results

A total of 419 older adults participated in this study. The mean age was 80.2 (\pm 4.5 years); most of the sample were women (69.9%) and subjects with 1 to 4 years of schooling (58.2%). In relation to satisfaction domains, 79.7% declared they were very/extremely satisfied with life, 56% were very/extremely satisfied with their health, 50.7% were very/extremely satisfied with their memory, 84.6% were very/extremely satisfied with their friendships, 72% were very/extremely satisfied with the environment they lived in, and 85.4% were very/extremely satisfied with their family relations. Mean overall satisfaction with life was 23.1 points (\pm 3.7). The mean score for overall self-reported health was 16.6 (\pm 2.6) points. Regarding purpose in life, after the division into tertiles, results were categorized as low (\leq 27), medium (28 – 32), and high sense of purpose (\geq 33), with a mean among participants of 29.9 (\pm 5.4) points. (Table 1).

Two reviews of the initial model of path analysis were conducted, from which acceptable values were obtained for all goodness of fit criteria. By estimating the path coefficients,

it was found that all were significant ($p < 0.05$) and there was no indication for modification of the model. Figure 3 shows the results of the path analysis. Direct associations were found between gender and morbidities ($\beta = 0.75$; $p < 0.001$); schooling and self-reported health ($\beta = 0.54$; $p = 0.010$); morbidities and self-reported health ($\beta = -0.53$; $p < 0.001$); self-reported health and purpose in life ($\beta = 0.31$; $p = 0.004$); self-reported health and satisfaction with life ($\beta = 0.63$; $p < 0.001$); and purpose in life and satisfaction with life ($\beta = 0.15$; $p < 0.001$). In addition to these direct associations, indirect associations were also found. The relationship between gender and purpose was mediated by morbidities and self-reported health ($\beta = -0.12$; $p = 0.024$); morbidities also mediated the relationship between gender and self-reported health ($\beta = -0.39$; $p < 0.001$), whereas the relationship between gender and overall satisfaction with life was mediated by morbidities, self-reported health, and purpose in life ($\beta = -0.26$; $p = 0.001$). Self-reported health mediated the relationship between morbidities and purpose ($\beta = -0.16$; $p = 0.011$), between morbidities and overall satisfaction with life ($\beta = -0.35$; $p < 0.001$), and between schooling and overall satisfaction with life ($\beta = 0.36$; $p = 0.013$); purpose mediated the relationship between self-reported health and overall satisfaction with life ($\beta = 0.04$; $p = 0.015$). Overall self-reported health and purpose in life were mediators in the relationship between morbidities and overall satisfaction with life (Table 2).

Table 1

Characteristics of the Sample According to Sociodemographic Variables, Morbidities, Self-reported Health, Purpose, and Satisfaction with Life. São Paulo, Brazil, 2017

Characteristic	<i>n</i>	%	<i>M</i> (SD)	Md
Gender				
Woman	293	69.9		
Man	126	30.1		
Age range				
70 to 74 years	35	8.4		
75 to 79 years	150	35.8	80.2±4.5	80
80 to 84 years	164	39.1		
≥ 85 years	70	16.7		
Schooling (years)				
No schooling	57	13.7		
1 to 4	244	58.2	4.4±3.7	4
≥ 5	118	28.1		
Morbidities				
0	35	8.9		
1	96	23.9		
2	116	28.9		
3	86	21.4	2.2±1.3	2
4	40	9.9		
5	27	6.8		
6	1	0.2		
Self-reported health				
Overall				
Poor/very poor	32	7.7		
Fair	165	39.4		
Good/very good	222	52.9		
Compared to the others of the same age				
Worse/much worse	21	5.0		
Similar	77	18.7		
Better/much better	316	76.3		
Compared to the previous year				
Worse/much worse	155	36.9	16.6±2.6	17
Similar	199	47.5		
Better/much better	65	15.6		
Activity level compared to the previous year				
Worse/much worse	175	41.8		
Similar	198	47.3		
Better/much better	46	10.9		
Memory compared to others of the same age				
Worse/much worse	44	10.8		
Similar	132	32.5		
Better/much better	230	56.7		
Purpose in life				
Low	134	34.8		
Medium	147	38.2	29.9±5.4	29
High	104	27.0		
Overall satisfaction with life				
Very little/little	14	3.4		
More or less	71	16.9		
Very satisfied/extremely	334	79.7		
Satisfaction with health				
Very little/little	56	13.4		
More or less	128	30.6		
Very satisfied/extremely	235	56.0		
Satisfaction with memory				
Very little/little	72	17.3		
More or less	134	32.0		
Very satisfied/extremely	212	50.7	23.1±3.7	23
Satisfaction with friendships				
Very little/little	20	4.7		
More or less	44	10.6		
Very satisfied/extremely	354	84.7		
Satisfaction with the environment they live in				
Very little/little	49	11.8		
More or less	68	16.2		
Very satisfied/extremely	302	72.0		
Satisfaction with family relations				
Very little/little	15	3.4		
More or less	47	11.2		
Very satisfied/extremely	357	85.4		

Note. *n* = sample; *M* = Mean; *SD* = standard deviation; Md = median.

Figure 3

Estimated Model for Morbidities, Overall Self-reported Health, Purpose, and Overall Satisfaction with Life according to Path Analysis. São Paulo, Brazil, 2017

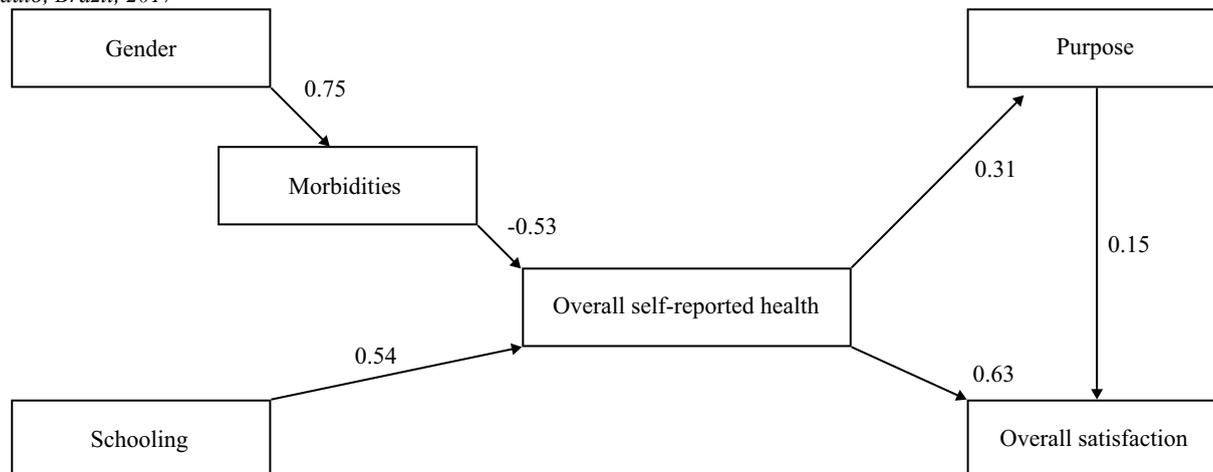


Table 2

Indirect associations between schooling, morbidities, overall self-reported health, purpose in life, and overall satisfaction with life. São Paulo, Brazil, 2017

Indirect associations	Mediating variable	Standardized coefficient	p-value
sex → self-reported health	morbidities	-0.39	0.001
morbidities → purpose in life	self-reported health	-0.16	0.011
sex → purpose in life	morbidities self-reported health	-0.12	0.024
morbidities → satisfaction with life	self-reported health	-0.35	0.001
self-reported health → satisfaction with life	purpose in life	0.04	0.015
sex → purpose in life	morbidities self-reported health	-0.26	0.001
schooling → satisfaction with life	self-reported health	0.36	0.013

Discussion

This study aimed to estimate the prevalence of overall satisfaction with life regarding purpose in life, morbidities, and self-reported health and to identify direct and indirect associations among the domains in Brazilian community-dwelling older adults. Results from path analysis showed that the relationship between morbidities and overall satisfaction with life was mediated by self-reported health, whereas purpose in life mediated the relationship between self-reported health and overall satisfaction with life.

Regarding research participants, most interviewees had one to four years of schooling, highlighting how difficult it is to have access to education, especially in developing countries. The fact that women composed most of the sample illustrates the feminization of old age as a result of decreasing mortality rates among women in relation to men (Mota et al., 2020). Our study showed a high prevalence of morbidities; most participants suffered from two to six

chronic diseases and believed they were very or extremely satisfied with life in general.

As for the relationship between morbidities and satisfaction with life, physical disabilities resulted from chronic diseases could negatively affect satisfaction with life (Li et al., 2023), reducing the level of well-being in older adults. These conditions can reduce life expectancy, increase the likelihood of hospitalization, worsen quality of life, and lead to functional disability and to polypharmacy (Northwood et al., 2018). Our study showed that the association between morbidities and satisfaction with life is not direct but mediated by self-reported health and purpose in life.

Our data showed a positive association between self-reported health and purpose in life. The strong, significant positive correlation between health status and satisfaction with life is in line with findings from a recent meta-analysis on health status and subjective well-being (Ngamaba et al., 2017). Indirect associations between morbidities and satisfaction were found, and overall self-reported health mediated the

relationship between them, suggesting that chronic illness might negatively affect the well-being of older adults when these diseases first affect their self-reported health. In this context, subjective health seems to exert more influence on satisfaction than objective data such as the existence of chronic diseases.

In this study, despite the significant number of morbidities of participants, most of the older adults evaluated their overall health as good or very good. An even higher percentage of the sample assesses their perceived health as better or much better than that of others of the same age. Social comparison is a regulating compensation mechanism through which older adults can overcome adversities and subjectively explain their health status (Baltes, 1997). In addition, social desirability may also explain why participants have the tendency to project a positive idea of themselves, to avoid receiving negative evaluations (Perinelli & Gremigni, 2016). This fact might lead to an expressive number of older adults that consider a high level of satisfaction with life when they evaluate themselves.

A central question is how can older people adapt to different conditions imposed by life in old age. The Rowe and Kahn model (1998) — which establishes that low probability of diseases, among other factors, is an essential element for successful aging — could be considered a limited model because it does not consider the adaptive process that older adults experience in the presence of disabilities and adversities. Research shows that older adults use adaptive strategies to deal with adversities imposed to them, such as a chronic illness that might reduce their quality of life, autonomy, and independence. One example is the socioemotional selectivity theory (Scheibe & Carstensen, 2010), according to which older adults, when faced with the prospect of reduced future time, tend to focus their attention on positive events that contribute to their well-being, reducing their attention to negative situations. Another theory, that of selection, optimization, and compensation (SOC), establishes how older adults can manage adverse events through the creation of opportunities for development, based on their singularity and on the context in which they live (Baltes, 1997). Since subjective well-being is influenced by self-regulation mechanisms, older adults seem to ensure a high level of satisfaction with life through these strategies of adaptation even when facing situations such as physical illness.

Another point is that some researchers state that the Rowe-Kahn theory (Rowe & Kahn, 1998), which encompasses, among other factors, the low probability of diseases as fundamental to successful aging, does not necessarily seem to reflect the view of older adults themselves (Whitley et al., 2016). To what extent are the dimensions proposed by the Rowe-Kahn model of successful aging (Rowe & Kahn, 1998) consistent with satisfaction and self-assessment of older adults' health? Whitley et al. (2016) suggest that the best measures of successful aging seem to be subjective, such as self-assessment of health or satisfaction with life, which considers beliefs, experiences, priorities, and individual circumstances. Moreover, it seems that Rowe

and Kahn's (1998) model presents a more pessimistic picture of successful aging than the evaluation that older adults make themselves regarding the aging process. The high levels of satisfaction and self-assessment of health reported by the participants of our study, although in the presence of chronic diseases, seem to corroborate the thesis advocated by the authors. Moreover, the fact that aging is based on individual differences leads to singular perceptions of successful aging, since the sociocultural context strongly influences this evaluation. In agreement with this fact, a scoping review showed that there are variations about how older adults perceive which factors might contribute to successful aging (Blanco-Molina et al., 2020).

Path analysis showed that the relationship between morbidities and satisfaction is mediated not only by self-reported health, but also by purpose in life, suggesting that other forms of well-being may act as moderators in this relationship. Both purpose and satisfaction with life are related, in addition to other dimensions, with psychological well-being. Ryff's (1989) model of psychological well-being includes purpose in life as one of its dimensions, in addition to personal growth, self-acceptance, environmental mastery, positive relations with others, and autonomy. Our study found a direct, albeit weak, association between purpose in life and satisfaction, a finding corroborated by a review study (Irving et al., 2017). It is interesting to note that most studies involve purpose as an independent variable for other health outcomes, especially physical health (Panagi et al., 2021). There is a lack of evidence regarding purpose as a mediator between diseases and well-being in older adults. Our study showed the mediating role of purpose in the relationship between self-reported health and satisfaction. In short, the better the overall self-reported health of older adults, the higher their levels of purpose in life and of overall satisfaction with life. Obtained data suggest that having orientation towards clear pre-established goals and objectives predicts older adults' cognitive judgment about their own lives.

Regarding limitations of the study, it should be noted that its cross-sectional design does not allow for inferences on possible causes and effects from the relationship between the variables. Another point is that self-reported health, purpose, and satisfaction with life may be subject to a memory bias of the participants when requiring a cognitive effort. Additionally, the participants may have the influence of social desirability. The study had a regional subsample, which does not allow generalization of the results. Nevertheless, this study contributes to further the knowledge about the determinants of successful aging in community-dwelling older adults, considering the complexity of the functioning of well-being in this population.

Path analysis uncovered direct and indirect associations of variables such as morbidities, overall self-reported health, and purpose with overall satisfaction with life in older adults. The data obtained suggest that overall self-reported health and purpose mediate the relationship between morbidities and overall satisfaction with life, conveying the complexity of well-being in old age. In addition to managing

chronic illness, making a subjective assessment of health and of well-being is key for ensuring successful aging. Further longitudinal studies may be needed to clarify how these factors behave over time and in different contexts, considering the heterogeneity of the aging process.

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