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Relationship between subjective well-being and the functionality of elderly outpatients

Relações entre o bem-estar subjetivo e a funcionalidade em idosos em seguimento ambulatorial

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Abstract

Objective: The aim of this study was to investigate the relationship between subjective well-being, functional independence and lower-limb performance (muscle strength, gait velocity and balance) among elderly people undergoing outpatient follow-up, stratified by sex and age groups. **Methods:** We evaluated 125 elderly people, aged 60 years and over, who received care at a geriatric outpatient clinic. The instruments used were: 1) Functional Independence Measure (FIM) to evaluate functional dependence; 2) Short Physical Performance Battery (SPPB) to measure physical performance; and 3) Subjective Well-Being (SWB) with questions about health and satisfaction with life. **Results:** A convenience sample was used, with predominance of females (who had greater functional impairment). The Spearman correlation coefficients for subjective well-being and the performance tests varied from -0.16 to 0.31 for men and -0.09 to 0.29 for women, therefore there were no differences between the sexes. However, the older participants had a higher level of satisfaction than the younger participants. Perceived health was also more satisfactory among the older participants, however comparative perceived health was better among the elderly participants with moderate to good physical performance. **Conclusion:** The results suggest that older individuals have greater satisfaction with life and better perceived health. Moreover, good physical performance was an important variable for better perceived health when compared to other people.

Key words: functional capacity; subjective well-being; perceived health; elderly person.

Resumo

Objetivo: Este estudo teve como objetivo verificar a relação entre o bem-estar subjetivo, independência funcional e desempenho de membros inferiores (força muscular, velocidade de marcha e equilíbrio) de idosos em seguimento ambulatorial, em relação ao sexo e a grupos etários. **Métodos:** Foram avaliados 125 idosos de ambos os sexos com idade mínima de 60 anos, atendidos em um ambulatório de geriatria. Os instrumentos utilizados foram: 1) Medida da Independência Funcional (MIF) para avaliar a dependência funcional; 2) Short Physical Performance Battery (SPPB) para medir o desempenho físico; 3) Bem-Estar Subjetivo (BES): questões sobre a saúde e satisfação com a vida. **Resultados:** A amostra utilizada foi de conveniência, com predomínio do sexo feminino, que apresentou maior comprometimento funcional. As correlações do bem-estar subjetivo com o teste de desempenho não demonstraram diferenças entre os sexos, contudo os idosos mais velhos apresentaram maior nível de satisfação que os idosos mais jovens. A saúde percebida também foi mais satisfatória entre os idosos mais velhos. Entretanto, a saúde percebida comparada mostrou melhores resultados nos idosos com moderado a bom desempenho físico. **Conclusão:** Os resultados sugerem que indivíduos mais velhos apresentam maior satisfação com a vida e melhor saúde percebida. Além disso, o bom desempenho físico foi uma variável de relevância para melhor saúde percebida quando comparada a outras pessoas.

Palavras-chave: capacidade funcional; bem-estar subjetivo; saúde percebida; idoso.

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Introduction

The growing number of elderly people and the possible effects of old age on physical, mental and social relationships are evidence of the need to recognize the variables that promote the well-being of this population. Subjective well-being (SWB), perceived and evaluated by individual experiences, is a self-assessment manifested by positive affects such as humor and sentimental behavior that outweigh negative affects and by overall satisfaction with life and domains of life such as health, work, independence, among others[1]. It also includes personal comparisons with past experiences and with the well-being of individuals of the same age group[2].

In addition to the subjective aspects (perception), studies highlight objective predictors that influence SWB, among them, perceived health[3-5]. It is believed that this influence does not derive only from what elderly people feel physically, but from their perception of health or perceived health (PH). PH also involves an interaction of variables (including the consequences of diseases on well-being and on the activities that the elderly can perform), the comparison of their health with the health of others of the same age and the expectations of old age[6-8]. There are few studies on the importance of sex and age to PH[9], however there is evidence that the decline in functional capacity or functionality of the elderly leads to a significant reduction in SWB[2,3].

It is worth noting the importance of functional capacity in old age as it is the standard of the National Health Care Policy for the Elderly, which aims to recover, maintain and promote the autonomy and independence of elderly people, considering that the concept of health in old age is conveyed more by the condition of autonomy and independence than by the presence or absence of organic disease[9]. In this sense, the International Classification of Functioning[10] includes in its definition the physical, environmental and subjective aspects of the individuals and their health, making it clear that functionality encompasses all body functions and systems, individual and social activities and positive aspects of the individual with regard to personal and environmental factors. In health care, it becomes relevant to identify the subjective aspects of the well-being of the elderly from their own point of view so that therapy can meet the demands in various spheres.

Another aspect that deserves mention is the individual's satisfaction with domains of life, i.e. satisfaction with health, memory, relationships, care, environment, work, access to health services. Satisfaction is not only influenced by functional capacity, but it is also one of the components of SWB, as it is included in the context of subjective evaluation. Thus, the present study aims to investigate the relationship between subjective well-being, functional independence and lower limb (LL) performance (balance, gait and strength) among elderly people undergoing outpatient follow-up in relation to age groups and sex. The study also aims to verify the influence of performance, functional independence, age and sex on SWB.

Methods

This is a cross-sectional, exploratory study conducted at the geriatric outpatient clinic of Hospital de Clínicas da Unicamp. The elderly outpatients were 80 years and over or at least 60 years old if they had some level of dependence. The present study is part of a larger study on frailty and subjective well-being of elderly people, held at this outpatient clinic that allowed database access to the researchers of the Graduate Nursing Program and the Graduate Gerontology Program of the Faculty of Medical Sciences of the Universidade Estadual de Campinas.

Participants

We used a non-probability sample of convenience, considering the homogeneous characteristics of the population and the time of collection. The participants were 125 elderly patients, aged 60 years and over, of both sexes, interviewed from October 2005 to September 2007. They were physically and mentally able to understand and answer the instrument and they agreed to take part in the study.

The elderly people were invited to participate at the outpatient clinic and those who agreed to take part in the study signed an informed consent form. Anonymity and the continuity of their treatment in case of refusal were guaranteed. The study was approved by the Ethics Committee of the Faculty of Medical Sciences of Unicamp, No. 240/2003.

Data collection

For this study, the following variables were used from the database:

- Socio-demographic data: sex and age
- Subjective Well-Being (SWB): evaluation of PH and comparative PH (CPH), overall satisfaction with life (OSL) and satisfaction with domains of life (SDL)[2]. The measurement was performed using two questions about PH (general health and health compared to other individuals of the same age); two questions about OSL (satisfaction with life and satisfaction with life compared to other individuals of the same age); and 13 questions about SDL (health, memory, resolution capacity, friendships, help of others, health care,

attention and affection from others, environment, work, housing conditions, access to health services and means of transport). Each question was assigned a value of one to three, with higher scores indicating better perception and better satisfaction.

- Functional Independence Measure (FIM) [11]: one of the most widely used instruments for evaluating functional dependence in activities of daily living, i.e. for identifying the need for help from another person to carry out these activities. It consists of 18 tasks divided into: motor FIM (FIMm), which evaluates self-care activities, sphincter control, mobility, and locomotion; and the cognitive/social FIM (FIMcs), which evaluates communication and social cognition. The value assigned to each task is 1 to 7, with the value 7 corresponding to complete independence and 1 to total dependence. The total score of the evaluation varies from 18 to 126.
- Physical performance: evaluated through the instrument Short Physical Performance Battery (SPPB)[12], which evaluates balance, gait and lower limb strength. Balance is evaluated in three positions: 1) with feet parallel; 2) with the hallux leaning on the medial edge of the heel; and 3) with the hallux leaning against the back edge of the heel. One point is attributed if the test performance time is ≤10s and zero if > 10s for the first two tests. In the third test the score ranges from zero if <3s, 1 if between 3s and 9.99s, and 2 if ≥ 10s. For gait evaluation, a stopwatch was used to record the time that the individual took to traverse a four-meter corridor (go and come back), repeating the route twice. The score of the instrument ranges from zero to four: zero when unable; 1 if > 8.70s; 2 if between 6.21s and 8.70s; 3 if between 4.82s and 6.20s; and 4 if <4.82s. LL muscle strength was verified by the time the participant took to rise from a chair with arms folded across the chest and repeat the test five consecutive times. The scores vary according to the time taken: zero when unable; 1 if > 16.7s; 2 if between 13.7s and 16.69s; 3 if between 11.2s and 13.69s; and 4 if <11.19s. The total SPPB score, obtained by the sum of all test scores, ranges from zero to 12 points and represents the LL performance of elderly people through the following scale: zero to 3 points represents inability to perform or poor performance; 4 to 6 points represents fair performance; 7 to 9 points, moderate performance; and 10 to 12 points, good performance.

Data analysis

The data were submitted to the following analysis:

- Descriptive with position measurements (mean, median, minimum and maximum) and dispersion (standard deviation): for the treatment of socio-demographic data and scores of the used instruments.
- Reliability: Cronbach's alpha coefficient to evaluate the internal consistency of the instruments, considering it satisfactory when >0.70.
- Correlation (Spearman): for the analysis of the relationship between numerical variables with values <0.3 indicating poor correlation, values ≥ 0.3 and < 0.5 indicating moderate correlation and values ≥0.5 indicating strong correlation.
- Logistic Regression Analysis: univariate and multivariate analysis was performed. The method of variable selection was the stepwise or step by step method, which considers all variables, whether or not significant in the univariate analysis. Only the variables that are significant ($p<0.05$) in conjunction are selected for the final model of multivariate analysis.

The components of the SWB, PH and CPH were analyzed as dependent variables whereas sex, age group, physical performance (SPPB scores) and functional independence (FIM scores) were the independent variables. The choice of dependent variables was based on the relevance of PH and CPH on the SWB according to previous evidence[6-8]. The level of significance for the statistical tests was 5% ($p<0.05$).

Results

The 125 elderly participants had a mean age of 72±7.58 years and 61.6% were women. The mean SPPB score was 5.53±2.4, which corresponds to poor LL performance, and the mean FIM total score was 112.9±12.86, indicating that the elderly participants had functional independence. The items related to PH and CPH showed similar mean values, approximately 2.13 to 2.45, which corresponds to the possible variation. In the SDL, the mean was 29.72±4.41, as shown in Table 1.

In the correlation between the SPPB, FIM and SWB according to sex (Table 2), there was a moderate correlation between the CPH and gait, SDL and balance among the elderly males. There was no statistical significance in the relationship between the FIM and the SWB. Among the females, there was a significant correlation between the CPH and gait, SDL and muscle strength. The variables overall satisfaction with life (OSL) and SDL showed significant correlation with the FIMcs. In this group, all correlations were poor.

Table 3 shows an increase in the number of significant correlations between the SWB and the SPPB and FIM as age advances. In the group aged 60 to 69 years, there was

no significant correlation between SWB and SPPB, however there was a significant moderate to strong correlation among all items of SWB, except comparative overall satisfaction with life (COSL) and the FIMcs. There was also a significant moderate to strong correlation between PH and CPH and the total FIM. In the group aged 70 to 79 years, however, there was a significant poor to moderate correlation between CPH and balance, gait, total SPPB, FIMm and total FIM; the COSL showed a significant low to moderate correlation with balance, gait and SPPB total. In the elderly group aged ≥ 80 years, there was a significant poor to moderate correlation between CPH and gait, OSL and SPPB total, COSL and muscle strength, total SPPB and total FIM, and SDL and balance, muscle strength, total SPPB, FIMm and total FIM.

We opted for the analysis of univariate and multivariate logistic regression to verify the most important variable or the one that best explains the SWB, analyzed here by means of PH and CPH.

Table 4 shows the multivariate regression analysis for PH and CPH. Age was significant as the variable that best explains PH. In the group aged 70 to 79 years, the chance of better PH is 3.69 higher, while in the group aged ≥ 80 years, that chance is 4.41 higher. In contrast, physical performance assessed by the SPPB was the significant variable that most influenced CPH. The participants who obtained a total SPPB score of 7 to 12 points were 3.74 more likely to have a better CPH.

Discussion

The studied sample (n=125) showed a poor performance in the SPPB test (mean=5.53±2.56), but without compromising functional independence (mean FIM=112.9±12.86), specifically for the instrument activities, the majority of which are basic activities of daily living (BADLs). In fact, studies on the functionality of elderly people show that the BADLs are the last to be compromised as a result of aging or health problems. In a hierarchy of complexity, we find first an impairment of advanced activities of daily living (AADLs), followed by the instrumental activities (IADLs) and, finally, the BADLs, which are closely related to the self-care activities[13]. These results point to the need to use instruments that evaluate the different levels of complexity of activities, to the extent that it is necessary to make early interventions aimed at the prevention of dependence and the recovery of functional independence of elderly people. This applies to geriatric services geared toward clinical and surgical care and rehabilitation services.

Similarly, SWB also showed high mean values and, as in other studies, there was a correlation among SWB items and

Table 1. Characteristics of participants - age, SPPB, FIM and SWB (n=125).

Variables	N (%)	Mean (±SD*)	Median	Observed variation	Possible variation
Age (years)		72 (±7.58)	77.00	60-93	—
60-69	24 (19.20)				
70-79	55 (44.00)				
≥80	46 (36.80)				
Sex					
Male	48 (38.40)				
Female	77 (61.60)				
SPPB					
Balance	125 (100.00)	2.61 (±1.39)	3.00	0-4	0-4
Gait	125 (100.00)	1.95 (±1.02)	2.00	0-4	0-4
MS	125 (100.00)	0.98 (±1.72)	1.00	0-4	0-4
Total SPPB	125 (100.00)	5.53 (±2.56)	6.00	0-11	0-12
FIM					
FIMm	125 (100.00)	82.07 (±9.69)	85.00	44-91	13-91
FIMcs	125 (100.00)	30.87 (±4.81)	33.00	14-35	14-35
FIM Total	125 (100.00)	112.9 (±12.86)	116.00	67-126	18-126
SWB**					
PH	123 (98.40)	2.13 (±0.70)	2.00	1–3	1–3
CPH	123 (98.40)	2.37 (±0.73)	3.00	1–3	1–3
OSL	123 (98.40)	2.37 (±0.70)	3.00	1–3	1–3
COSL	123 (98.40)	2.45 (±0.67)	3.00	1–3	1–3
SDL	123 (98.40)	29.72 (±4.41)	30.00	18-36	13-39

*SD=standard deviation, ***Missing*=2. N=number of participants; MS=muscle strength; FIMm=motor FIM; FIMcs=cognitive/social FIM; PH=perceived health; CPH= comparative PH; OSL=overall satisfaction with life; COSL=comparative OSL; SDL=satisfaction with domains of life.

Table 2. Correlation on the SWB score with the SPPB and FIM according to sex (n=125).

Variables	Men (n=48)					Women (n=77)				
	SWB					SWB				
	PH	CPH	OSL	COSL	SDL	PH	CPH	OSL	COLS	SLD
SPPB										
Balance	r=0.23645	0.25982	0.02181	0.20566	0.30247	r=0.10438	0.00374	-0.08837	0.00148	0.04447
	p=0.1057	0.0745	0.883	0.1608	0.0367	p=0.3728	0.9746	0.4509	0.9900	0.7048
						n=75	75	75	75	75
Gait	-0.1199	0.31217	-0.027966	0.12733	-0.15099	0.21274	0.24680	0.03770	0.11156	0.10401
	0.4169	0.0308	0.0542	0.3885	0.3056	0.0669	0.0328	0.7481	0.3407	0.3745
						75	75	75	75	75
MS	-0.0185	0.15705	0.03188	0.16519	-0.08371	0.06530	0.09776	0.04581	0.00500	0.28977
	0.9008	0.2864	0.8297	0.2619	0.5716	0.5778	0.4040	0.6963	0.9661	0.0117
						75	75	75	75	75
SPPB Total	0.00849	0.25936	-0.15816	0.20112	0.04550	0.15047	0.12261	-0.00239	0.02588	0.11518
	0.9543	0.0751	0.283	0.1705	0.7588	0.1976	0.2947	0.9837	0.8256	0.3251
						75	75	75	75	75
MIF										
FIMm	0.09819	0.20384	-0.03047	0.04732	0.03601	0.21298	0.17685	-0.04091	0.08155	0.13084
	0.5067	0.1646	0.8371	0.7495	0.8080	0.0666	0.1291	0.7275	0.4867	0.2632
						75	75	75	75	75
FIMcs	0.01531	0.21639	0.16348	0.13259	0.24976	-0.04263	0.17221	0.0392	0.25569	0.26151
	0.9178	0.1396	0.2669	0.369	0.0869	0.7165	0.1396	0.7384	0.0268	0.0234
						75	75	75	75	75
FIM Total	-0.0365	0.21137	-0.02492	0.03295	0.09568	0.13702	0.21400	0.00725	0.16867	0.20688
	0.8057	0.1493	0.8665	0.8241	0.5177	0.2411	0.0652	0.9508	0.1480	0.0749
						75	75	75	75	75

r=Spearman correlation cofficient; p=p-value; n-número de participants. The significant correlations are underlined. MS=muscle strength; FIMm=motor FIM; FIMcs=cognitive/social FIM; PH=pperceived health; CPH=comparative PH; OSL=overall satisfaction with life; COSL=comparative OSL; SDL=satisfaction with domains of life.

physical performance in both sexes (CPH and gait in both sexes, SDL and balance among male participants and strength of LL among females) [14-16]. In a study with elderly Japanese, there was no significant correlation between SWB and overall functionality in both sexes, however the upper-limb motor coordination, an item of the functional capacity test, showed significant correlation with satisfaction with life[17].

Also in the study on healthy elderly people and elderly people who had suffered a stroke, there was no significant difference between the groups in relation to SWB and functional capacity. However, the variables female sex, advanced age, good general health and social network were predictors of greater satisfaction with life in the studied sample[18]. Given the multidimensional nature of SWB, the results suggest that the performance of specific tasks may compromise certain areas of SWB, especially if the tasks are considered essential by the elderly person, but this performance does not compromise the overall SWB.

In the present study, the group aged ≥ 80 years also showed higher scores in the correlation between SWB and physical performance and functional independence. Psychosocial variables reveal coping strategies that contribute significantly to the well-being of elderly people[7] and prevent or restrict the progressive decline in satisfaction with life[1]. Survey results show that younger elderly people are less satisfied than the older elderly people with their functional independence. This fact can be explained by the resilience of the older elderly people, which consists in the adaptation to this phase of life. They face whatever challenges and obstacles may arise and allow the subjective conditions to sustain psychological resilience, even when biological resilience is compromised[19, 20].

A review on SWB and age[1] found that satisfaction with life does not decline with age even though other variables related to well-being, such as marriage and income, actually decline with age. Negative emotions remain relatively constant and positive affects decline. Therefore, there is reason to be optimistic about the flexibility and the ability of individuals to adapt and still achieve positive levels of satisfaction with life as they age, even in conditions often considered unpleasant.

We highlight the importance of these aspects in rehabilitation interventions, especially among elderly patients with sequelae of diseases such as stroke or amputation, common in this age group. The rehabilitation professionals must agree with the elderly patient on the goals to be achieved,

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Table 3. Correlation of the SWB score with SPPB and FIM according to age (n=125).

Variables	Age 60-69 (n=24)					Age 70-79 (n=55)					Age >=80 (n=44)				
	SWB					SWB					SWB				
	PH	CPH	OSL	COSL	SLD	PH	CPH	OSL	COSL	SLD	PH	CPH	OSL	COSL	SLD
SPPB															
Balance	r=0.21857	-0.18104	-0.29055	-0.07832	0.04350	0.14193	0.36383	0.03140	0.26668	0.07470	r=0.23825	0.16474	0.26586	0.25249	0.46433
	p=0.3048	0.3972	0.1684	0.7160	0.8401	0.3013	0.0063	0.8200	0.0490	0.5878	p=0.1194	0.2853	0.0811	0.0982	0.0015
Gait	0.11341	0.21175	-0.22060	0.11890	0.17040	0.24763	0.42973	0.09198	0.29559	-0.05413	0. 12130	0.49047	0.19126	0.22641	0.26845
	0.5978	0.3206	0.3003	0.5800	0.4260	0.0683	0.0011	0.5042	0.0285	0.6947	0.1686	0.0007	0.2136	0.1394	0.0781
MS	0.25583	0.19773	-0.11463	0.25549	0.30643	0.01016	0.17312	0.16723	-0.00042	0.04766	0.11294	0.24367	0.24661	0.30860	0.41700
	0.2276	0.3544	0.5938	0.2282	0.1453	0.9413	0.2062	0.2223	0.9976	0.7297	0.4654	0.1110	0.1066	0.0415	0.0049
SPPB Total	0.08405	-0.03587	-0.29744	-0.04012	0.08073	0.15748	0.42987	0.10086	0.31605	0.03208	0.28493	0.37535	0.31707	0.32941	0.48178
	0.6962	0.8679	0.1581	0.8524	0.7077	0.2509	0.0011	0.4637	0.0187	0.8162	0.0608	0.0121	0.0360	0.0290	0.0009
FIM															
FIMm	0.39726	0.23162	-0.14353	-0.01516	0.11286	0.14337	0.34215	0.05946	0.12520	0.06863	0.27046	0.21224	0.13605	0.27567	0.31110
	0.0546	0.2762	0.5034	0.9440	0.5995	0.2964	0.0106	0.6663	0.3624	0.6186	0.0758	0.1666	0.3785	0.0701	0.0398
FIMcs	0.48097	0.49812	0.61490	0.40357	0.46355	-0.01545	0.18105	0.10636	0.19680	0.26106	-0.14284	0.18164	-0.12416	0.27173	0.19776
	0.0173	0.0132	0.0014	0.0505	0.0225	0.9108	0.1859	0.4396	0.1498	0.0542	0.3550	0.2380	0.4220	0.0744	0.1982
FIM Total	0.49345	0.49298	0.26931	0.26003	0.38065	0.06375	0.28497	0.04925	0.12485	0.13868	0.13096	0.22599	0.04522	0.29869	0.29808
	0.0143	0.0144	0.2032	0.2198	0.0665	0.6438	0.0350	0.7210	0.3638	0.3126	0.3968	0.1402	0.7707	0.0489	0.0494

r=Spearman correlation cofficient; p=p-value; n-número de participants. The significant correlations are underlined. MS=muscle strength; FIMm=motor FIM; FIMcs=cognitive/social FIM; PH=pperceived health; CPH=comparative PH; OSL=overall satisfaction with life; COSL=comparative OSL; SDL=satisfaction with domains of life.

considering that the subjective nature of well-being (satisfaction and PH) varies from person to person, whether professionals, relatives or the elderly person. Adaptive and coping mechanisms, such as lowering expectations, help the elderly patients to adjust their goals to their physical conditions[13]. This adjustment is associated with aspects that promote their own well-being and their well-being compared to other individuals of the same age[19].

These data can be confirmed in a study with 40 elderly participants who underwent LL amputation. Even with physical limitations due to amputation, the elderly people showed high scores in the subjective evaluation of their functional independence and in satisfaction with life[6]. In another study with 50 elderly people who had suffered stroke, the participants showed high satisfaction even with the possible functional changes due to stroke. Most of these elderly people had suffered stroke more than four years ago. According to the authors, the time elapsed could be considered as a mechanism of adjustment and adaptation to a new condition and a possibility of improving the quality of life[21].

From this perspective, it is possible to consider that the functional losses due to aging and disease and their consequences are eventually overcome through adaptation mechanisms, and positive emotions tend to prevail over negative emotions because SWB is conceptualized and measured as a long-term, not momentary, condition. The changes in the level of satisfaction seem to fluctuate around a set point[22]. With time, individuals who experience significant events in life, whether positive or negative, return to a normal positive level[23]. In addition, the older group may have attained more positive aspects of SWB though effective compensatory mechanisms, such as personal beliefs, spirituality, religiousness and social support, which are considered to provide better satisfaction in this phase of life[24].

Considering PH as a representation for SWB, age stands out again, showing that PH improves as age increases. This result corroborates other studies that showed better PH among the older elderly people, confirming that increasing age may influence the PH of this population[8,25,26]. This is because PH does not depend on the comparison between the current situation and the ideal standard, but on expectations of aging[7], i.e. PH is the integration of many aspects of health with the sense of being able to achieve the desired results[14].

In contrast, a study with 1239 elderly Canadians over 65 years of age found that the oldest elderly people perceived their health as "not very good". The authors highlighted health problems and functional limitations in daily activities as predictors of low scores in the PH of that population[15]. When CPH was used to represent SWB, the LL performance test was the most influential variable. Elderly people with high scores were more likely to have better CPH.

Table 4. Multivariate logistic regression analysis for PH and PHC (n=125).

Variables	Selected Variables	Categories	p-value*	OR**	95% CI OR
PH					
	Age	60-69 years		1,00	—
		70-79 years	0,054	3,69	0,98-13,98
		≥80 years	0,032	4,41	1,14-17,05
CPH					
	Total SPPB	0-3		1,00	—
		4-6	0,094	2,32	0,87-6,23
		7-12	0,005	3,74	1,48-9,47

*Stepwise criterion of variables selection for multivariate logistic regression analysis. PH=perceived health; CPH=comparative PH. Poor or fair PH (n=84); good PH (n=39); Poor or fair CPH (n=60); good CPH (n=63). ** OR=Odds ratio of better PH and CPH; 95% CI OR- 95% Confidence Interval for OR.

In a study on the relationship between physical capacity and PH with 44 elderly people of advanced age (80 years or more), the results of the PH questionnaire and the SPPB instrument showed that gait velocity had the strongest correlation with PH. However, in the total physical evaluation, physical capacity had a strong correlation with the sense of self-efficacy measured by the PH questionnaire[14]. A three-phase longitudinal study verified the physical evaluation and the relationship with PH of the same elderly people at 86, 90 and 94 years of age. There was a decrease in functional capacity with age, but the PH remained high among the older elderly people, even with functional changes[26].

The Berlin Aging Study examined the perception of current and comparative physical health in elderly people aged 70 to 105. The findings revealed no differences between age groups and found that, in this population, objective health remained stable throughout life. The authors attributed the results to the adaptation to functionality levels through the cognitive reorganization in the processes of internal comparison[16].

With the results of the present study, we can emphasize that physical performance not only influences functional capacity but it is also a strong variable of CPH, confirming that functionality levels and psychological dimensions influence the PH compared to others of the same age[8, 14]. Social comparison has an impact on SWB and, when participants compare their lives favorably to the lives of others, they are satisfied and experience positive emotions[27].

Comparing oneself to other people has an important role in the evaluation and construction of reality and coping with negative events. In situations of decreased well-being, people often compare themselves to others that they consider worse off in an effort to improve their well-being, especially when there are no opportunities of instrumental actions[28]. Among the elderly people with LL amputation[6], the standards of comparison were lower than the performance itself, that is, when

compared to other individuals of the same age, the participants of the study compared themselves to elderly people with lower performance, thus seeking to enhance their independence and their potential.

In a coping mechanism known as downward comparison[29], the individual knows that there are people in worse situations and with more problems and realizes that his or her situation is relatively more favorable, which leads to greater SWB. This mechanism may mitigate the current negative affects and allow the individual to feel better at the moment. The adaptation to a stressful event can be easier if the elderly person shifts the focus away from removing the threat and tries to accept the losses inherent in the current situation, reorganizing goals, priorities and desires[30].

Final considerations

The results of this study point to the need to develop intervention strategies for the elderly population, focusing on functionality, regardless of age. The adjustment mechanisms for the oldest old favor the self-perception of health and consequently improve SWB. Despite the limitations related to the particular characteristics of the sample (size, specificity of the field of study), the results showed that recovery interventions and maintenance of functional independence, however small they may seem, promote gains in PH in old age. Moreover, it reinforces the need to implement instruments to obtain subjective data in the clinical health evaluations of elderly people.

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