

Permanence in the labour market and life satisfaction in old age

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Abstract Population aging is a global trend that has drawn attention to policies to encourage a productive life and delayed retirement. Thus, it is necessary to expand our understanding of the effects of work on health indicators and well-being in old age. The purpose of this study was to determine the association of permanency in the labor market with sociodemographic and medical factors and life satisfaction in elders. We used the database from Study FIBRA-RJ including elderly (aged > 65) clients of a private health care plan who resided in northern districts of the municipality of Rio de Janeiro. Among the 626 participants, 82 (13,1%) maintained paid jobs. Multiple logistic regression showed that the odds of remaining working among the elderly were higher for men; and those with 9 years of studies or more, and those with high income; and those with no disabling clinical conditions and with higher satisfaction with life. This study confirms that work activities in old age are associated with better social and physical health conditions. Moreover, we observed that the maintenance of work activities was associated with higher life satisfaction, independent of socioeconomic and clinical characteristics in old age.

Key words Aging, Elderly, Life Satisfaction, Employment

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Introduction

Brazil suffers an accelerated process of population aging, stopping to be a country with a predominantly young population¹. The reduction of the working age population is one of the consequences of demographic transition and its social impact is strong enough to generate projections to start the contraction of this workforce to mid 2020². Parallel to this phenomenon, the increasing proportion of elderly in the labor market happens, leading researchers to question, in recent decades, if we are prepared to absorb the population group that intends to continue occupied until the last stage of life^{3,4}.

According to the Brazilian Institute of Geography and Statistics (IBGE)⁵, the rate of elderly Brazilians that entered the labor market in 2013 was 27.4% and increased to 29.1% in 2014⁶. The increase of elderly in the labor market has been observed in the country, even in times when there is a decrease in employment for the other age groups.

The occupancy level of people that are 60 years old or older is even higher among those who have no retirement or pension; in 2013; for example, the rate was 45.1%⁵. Therefore, the occupation in old age seems to be associated with the need to maintain or improve the family income at this stage of life. In this survey of IBGE, although the main source of the elderly population income was the retirement or pension (67.6%), the work accounted for 28.3% of the income composition of this group⁵. The need to provide for the family, combined with the loss of purchasing power caused by low levels of social security benefits, can explain the permanence of elderly in the labor market. However, studies have found other factors that contribute to the maintenance of labor activities in old age; among them experiences of pleasure associated with the occupation, use of free time with physical and/or mentally stimulating activities; social recognition and conservation of social ties⁷⁻¹⁰.

Traditionally, the term 'retirement' remit to the old age, even if it's considered that retired individuals are also represented by non-elderly people¹¹. Retirement also refers to the retreat of the old individual, in which the subject returns to the interior of the habitation and is no longer considered active in society¹². In an interview with six university professors, between 61 and 88 years old, aiming to understand what keeps them

in teaching activity, Moreira¹³ found that all of them consider the work as the life core, feeling the old age as a loss and the retirement, while synonymous of not work, as expression of inability. However, it has increased, considerably, the disassociation between old age and retirement, a fact consistent with the changes in the social imaginary that not all retirees are at an advanced age and that old age is not synonymous of retirement¹⁴.

According to Schwingel¹⁵, the elderly that remains occupied and active after retirement and/or perform volunteer work showed better cognitive performance, greater satisfaction, and well-being with life, remaining independent in their daily activities. Similarly, other studies have shown that engagement in volunteer work in old age was associated with gains, as better life satisfaction, positive self-esteem, better physical health, positive self-rated evaluation of health, improving the depression and reducing the risk of mortality^{7,16-18}.

These works emphasize the importance of working after retirement, stating that, in addition to being responsible for the proper physical and mental conditioning, it also gives the person a sense of usefulness and well-being. However, the relationship between the maintenance of paid work and life satisfaction in old age is not consensus in the literature. In a study of Okamoto¹⁹, the association between satisfaction with life and paid work was not found in the investigated elderly men, this association was obtained only for women. In the study of Nakahara²⁰, this association was not significant for the elderly who performed paid work, only for the elderly who held unpaid work. This author argued that the permanence of older people in paid activities would be the result of low socioeconomic status and, therefore, it is not a positive influence to the well-being in old age. In this direction, the study of the determinants of continuing an active life at older ages should be expanded, especially in countries like Brazil, where socioeconomic factors impact significantly the choices in old age. Furthermore, it should be investigated whether paid occupations to elderly are associated with satisfaction with life, independent of socioeconomic conditions. This study investigated the association of elderly remaining in the labor market, with socioeconomic and clinical factors, and satisfaction with life in elderly.

Methods

To compose the study population, it was used the basis of data from the Study of Fragility in Brazilian Older - Rio de Janeiro Section - FIBRA-RJ, (*Estudo da Fragilidade em Idosos Brasileiros – Seção Rio de Janeiro - FIBRA-RJ*), which evaluated a sample of elderly clients of a private health care operator. The details of the study methodology have been published in another article²¹. Briefly, the criteria for inclusion were being a client, for at least 12 months, of the health care operator; being 65 years old or older; and being resident in one of the districts of the North Zone of Rio de Janeiro City. A total of 9,769 individuals who met these criteria were selected as a sample, stratified by sex and age group. It was used an inverse random sampling, as strategy for predicting the filling of 900 questionnaires. For strata of men and women with 95 years old or older, a full census was taken.

The 847 older adults, who responded to FIBRA-RJ study protocol, were asked to respond, by telephone, to the occupation inventory, applied in the following year, after the data collection of the baseline. Of these, 81 elderly with cognitive impairment and / or severe functional and whose participation in the FIBRA-RJ study happened from the account of a substitute informant were excluded. In addition, 78 participants refused to answer the occupation questionnaire and other 62 were considered losses due to death or are no longer located after the face-to-face interview. Therefore, in this study, the records of 626 participants of FIBRA-RJ study were analyzed. It is important to highlight that among these last ones, 12 elderly did not respond to questions about satisfaction with life, thus their data were included in the association analysis of the stay in the labor market with the clinical and sociodemographic conditions, but not in the crude and adjusted analyzes for investigation of association between work and life satisfaction.

The sociodemographic characteristics included are: age; sex; total years of study; and personal income. Self-reports about presence of chronic diseases were obtained (stroke, cancer, arthritis, chronic obstructive pulmonary disease [COPD], depression, osteoporosis and coronary artery disease), diagnosed by a doctor in the last year.

A questionnaire was used to assess the intensity of satisfaction with life referenced to do-

mains²². The evaluated domains were: satisfaction with current life; satisfaction with current life, compared with other people at the same age; satisfaction with memory; satisfaction with the capacity for doing daily activities; satisfaction with friendships and family relationships; satisfaction with living environment; satisfaction with access to health services; satisfaction with the means of transportation. For each domain the respondent should rank their level of satisfaction by choosing one of the following response options: not much; more or less; very.

The information about the occupation was obtained through a questionnaire with semi-structured questions about the working activities conducted throughout life. The dependent variable of this study entitled “permanence in the labor market” was obtained with the answer to the question “Do you perform some work activity?”. In addition to this question, other questions about occupation have identified if the work activity carried out by the respondent referred to a paid work. These questions were: 1) “What was (is) your main occupation?” 2) “Is this activity the same occupation performed lifelong?” and 3) “Describe the activities you perform in your daily work routine”. The characterization of the main occupation was made from a predefined list composed by the categories of the Brazilian Classification of Occupation (CBO)²³, proposed by the Brazilian Ministry of Labor and Employment. According to this classification, the occupation would be a concept designed to encompass the activities carried out by individuals in their daily work routine, which may or may not involve a formal employment.

To investigate the association between the permanence in the labor market and the socio-demographic, clinical and satisfaction characteristics, analyzes associated with χ^2 test were performed. To estimate the odds ratios (and their respective confidence intervals) for the association of the stay in the labor market with socio-demographic characteristics, presence of chronic pathologies and life satisfaction, a multiple logistic regression was performed.

For data analysis, it was used the software Statistical Package for Social Sciences (SPSS) version 18.0. All results presented of relative frequency and association measures were weighted by sample weight.

The study was authorized by the Research Ethics Committee of Pedro Ernesto University Hospital.

Results

Of the 626 participants studied in this present study, 82 (13,1%) exercised work activities, while 544 (86,9%) stopped working. The permanence frequency in the labor market is showed in Table 1, according to the sociodemographic and clinical characteristics. Between the ones that were still working, it was observed a men predominance (55%), from 65 to 74 years old (58,4%), with thirteen years or more of study (45,9%) and income higher than 5,1 minimum salaries (66,3%). In the elderly group that stopped working, it was observed a women predominance (69,9%), from 75 to 79 years old (25,3%), with nine to twelve years of studying (34,3%) and income also higher than 5,1 minimum salaries (49,3%).

There was less prevalence of every studied pathologies in the group that was still working compared with the group which has stopped working (Table 1). Systemic arterial hypertension and diabetes mellitus were exceptions, without reaching statistical significance. A better health condition is positively associated with working.

The group of elderly who was still working, reported being more satisfied with life, compared to those who stopped working, except for the satisfaction with the means of transportation. The association of permanence in the labor market with satisfaction referenced to domains is shown in Table 2.

Table 3 describes the results of a multiple logistic regression and shows that the chances of remaining working were higher for men compared to women; for those with 9 or more years of study, compared to those with low education (not studied or until to 4 years of study); and for those with high income, compared to those who had personal income more two minimum salaries, regardless of medical conditions and life satisfaction.

The increase of age and the presence of heart disease, stroke, COPD, osteoporosis and depression were associated with fewer chances to remain in work activities. The association with the presence of cancer ($p = 0.643$) was not maintained after adjusting for other pathologies, sociodemographic characteristics and satisfaction with life.

As for life satisfaction, the logistic model indicated that older people who remain in the labor market are more satisfied with life than those who stopped working, independent of sociodemographic characteristics and clinical conditions.

Table 1. Permanence in the labor market according to socioeconomic and clinical characteristics (N = 626).

Variable	Permanence in the labor market	
	Yes N (%)	No N (%)
Sex		
Male	41 (45,0)	396 (69,9)
Female	41 (55,0)	148 (30,1)
Age group [*]		
65-69	24 (28,7)	90 (15,6)
75-79	15 (19,5)	132 (25,3)
70-74	26 (29,7)	136 (23,7)
80-84	12 (15,7)	111 (21,8)
≥ 85	5 (6,4)	75 (13,7)
Schooling [*]		
0-4	11 (13,7)	101 (18,3)
5-8	13 (14,9)	111 (20,4)
9-12	21 (25,5)	187 (34,3)
≥ 13	37 (45,9)	145 (27,0)
Family income ^{**}		
0-2	8 (9,7)	77 (14,2)
2,1-5	19 (24,0)	192 (36,4)
> 5,1	51 (66,3)	255 (49,3)
Coronary Disease [*]		
No	77 (93,8)	468 (85,6)
Yes	5 (6,2)	76 (14,4)
Stroke [*]		
No	80 (97,4)	517 (95,0)
Yes	2 (2,6)	27 (5,0)
Arterial hypertension ^{***}		
No	28 (33,9)	179 (33,0)
Yes	54 (66,1)	365 (67,0)
Diabetes mellitus ^{***}		
No	63 (76,4)	423 (78,1)
Yes	19 (23,6)	121 (21,9)
Cancer ^{**}		
No	77 (93,8)	519 (95,3)
Yes	5 (6,2)	25 (4,7)
Arthritis/Osteoarthritis [*]		
No	63 (77,3)	337 (62,6)
Yes	19 (22,7)	207 (37,4)
COPD [*]		
No	80 (97,3)	508 (93,5)
Yes	2 (2,7)	36 (6,5)
Depression [*]		
No	77 (94,0)	462 (85,2)
Yes	5 (6,0)	82 (14,8)
Osteoporosis [*]		
No	70 (86,6)	388 (72,0)
Yes	12 (13,4)	156 (28,0)

N (%): number of individuals in the unweighted sample (relative frequency weighted by the sample weight); * p-value < 0.001; ** p-value < 0.05; *** p-value > 0.1; #: N = 602; ‡: minimum wage: R\$ 465,00 - reference value in the study period.

Table 2. Life satisfaction referenced to domains, according to the situation in the labor market (N = 614).

Domain Satisfaction	Permanence in the labor market			
	Yes		No	
	N (%)		N (%)	
	Not much/ More or Less N (%)	Very N (%)	Not much/ More or Less N (%)	Very N (%)
Current life**	23 (28)	59 (72,1)	262 (49,2)	270 (50,8)
Current life, compared with other people at the same age**	13 (15,9)	69 (84,2)	148 (27,9)	383 (72,3)
Memory*	39 (47,6)	43 (51,2)	277 (52,1)	255 (48,3)
Capacity for doing daily activities*	16 (19,5)	66 (79,7)	197 (37)	335 (62,8)
Friendship and family relationships*	20 (24,4)	62 (75,2)	167 (31,4)	365 (68,6)
Living environment*	32 (39)	50 (61)	255 (47,9)	277 (52,2)
Health services*	32 (39)	50 (60,5)	263 (49,4)	269 (51,2)
Means of transportation**	39 (47,6)	43 (52,7)	256 (48,1)	276 (51,9)

*p-value < 0.001; ** p-value > 0.05.

Discussion

In this study, the permanence in the labor market after 65 years old was associated with male, younger age groups, with higher educational level and higher income. In addition, this maintenance of paid work among the elderly was associated with better physical health and greater life satisfaction in the old age.

As for gender and age factors, Wajnman et al.²⁴ point out that men and women have, over the life cycle, behavior and roles very different, compared to the labor market, thereby they reach the old age with very different levels of activity. According to Rocha-Coutinho²⁵, studies conducted in different countries have shown that both men and women thought that the house and the children were female responsibilities, leaving the men of the family in charge of the financial support. This is a cultural reality, still preserved, mainly by the older cohorts, in which the role of the caregiver is predominantly occupied by women. It is known that domestic work and child care continue to be allocated to women, predominantly^{26,27}. However, transformation in the management and support of families have undergone significant changes due to the new female roles in the labor market and family structure, consisting of couples without children^{28,29}. In Brazil, the reality is also modified as a result of legislation, whose social security and assistance guarantees to the elderly, benefited many women

who, although they have not formally contributed to social security, had a guaranteed income in old age³⁰⁻³².

As for the influence of age, it was found out that the rate of elderly who remained active in the labor market decreased with age, from 58.4% in the 65-74 years old group to 19.5% between 75 and 79 years old group. In Brazil, these results had already been observed in recent decades. For example, Camarano et al.³³ observed a reduction in the permanence rate in the labor market, which was around 47% at 65 years old, to 22.1% after 75 years old. Similarly, Wajnman et al.²⁴ also highlighted that activity rates strongly declined with age. These findings are consistent with the recent IBGE⁶ data that showed higher occupancy rates for men, compared to women, and reduction, according to the increase of the age, for both genders. This rate was 41.9% for men and 18.9% for women, aged over 60 years old, but fell to 30.0% for men aged 65 years old or more and 23.5% for those with 70 years old or more. Moreover, even decreasing with age increasing, the level of employment of men is higher than women in all age groups.

One factor that may influence the prevalence of elderly men, who return to work after retirement, is the growing number of families, dependent on the elderly income. The elderly in the role of the main provider tends to delay their retirement or cause the return to work activities to strengthen the domestic budget³⁴⁻³⁶

Table 3. Odds ratios and 95% confidence intervals for association of the permanence in the labour market with sociodemographics characteristics, presence of chronicles pathologies and life satisfaction (N = 614).

Variables	OR (IC95%)	p-value
Sex		
Male	1,00	
Female	0,387 (0,328-0,456)	0,000
Age group		
75-79	1,00	
80-84	0,449 (0,334-0,604)	0,000
>= 85	0,716 (0,514-0,997)	0,048
Schooling		
0-4	1,00	
5-8	0,932 (0,711-1,222)	0,612
9-12	1,580 (1,235-2,021)	0,000
>= 13	1,891 (1,551-2,305)	0,000
Family income*		
0-2	1,00	
2,1-5	1,407 (1,059-1,868)	0,018
> 5,1	1,839 (1,511-2,238)	0,000
Life satisfaction		
Very	1,00	
Not much/More or Less	0,527 (0,446-0,624)	0,000
Coronary Disease		
No	1,00	
Yes	0,360 (0,268-0,483)	0,000
Stroke		
No	1,00	
Yes	0,556 (0,353-0,877)	0,012
Cancer		
No	1,00	
Yes	1,096 (0,795-1,511)	0,577
Arthritis/Osteoarthritis		
No	1,00	
Yes	0,732 (0,607-0,883)	0,001
COPD		
No	1,00	
Yes	0,565 (0,367-0,872)	0,010
Depression		
No	1,00	
Yes	0,454 (0,329-0,629)	0,000
Osteoporosis		
No	1,00	
Yes	0,705 (0,561-0,886)	0,003

OR (IC95%): Odds ratios of the logistics regression model, including demographic, clinic and satisfaction with current life variables, measured by the sample weight (confidence interval of 95%); * 24 elderly didn't provide information of income and for those cases it was inputted the average income reported by the study population.

In the higher social classes, retirement is defined by the reduction income, since it refers to the loss of bonuses^{10,37}. Thus, better qualified elderly is likely to remain active. This research found that 45.9% of the elderly who continued working after the retirement had thirteen years of schooling or more; this percentage was 27% in the group that came out of the labor market. It is assumed that older people with higher education probably had access to skilled occupations and chose to stay in the labor market, motivated both by income and by satisfaction with the work activities and achievements.

Reforming in pension systems and in specific groups of workers admission policies, both in developed countries and in middle-income countries, as Brazil, act as incentives to postpone retirement and permanence of the elderly population in the formal labor market³⁸. However, older workers, including retirees who legally cannot receive benefits such as unemployment insurance, have unfavorable conditions of employment, as lower and/or higher chances of dismissal remuneration when compared to younger³⁹. Due to appreciation of younger employees and increased production capacity in the formal sector, the informal work is seen as a good opportunity for those who want to remain working and complementing the income after retirement^{11,29}. Thus, the elderly have been attracted to part-time, temporary and autonomous jobs.

As for health indicators, we found out that the medical conditions that increase the chances of functional losses, such as coronary artery disease, stroke, arthritis/osteoarthritis, COPD, depression, osteoporosis were associated with the output of the elderly after retirement from the labor market. Hypertension and diabetes were not related to the permanence of the elderly in the labor market. In Boot et al.⁴⁰ study about predictors of elderly in the labor market, the authors also pointed out the elderly and chronically ill, as well as those with few psychosocial resources at work, as the most likely to stop working. Therefore, we can conclude about the importance of maintaining physical health to stay in the labor market in old age and to return to these activities after retirement.

As for life satisfaction, we found out that elderly people who continued to exercise paid employment in old age reported being more satisfied with life in its various dimensions (with life in general, with the social, cognitive and functional aspects and others) compared to those who stopped working. In a study by Nakahara²⁰,

with elderly Japanese, there was no association of paid work with life satisfaction, and low socioeconomic status used to explain the lack of association between these variables. In contrast, in the present study, the population with paid work in old age was associated with better socioeconomic conditions. It is assumed that, while among low-income elderly need to work does not seem to allow greater life satisfaction, in upper-class maintenance of work can mean maintaining the social role and the quality of life and, consequently, greater life satisfaction in old age. In this direction, other studies⁴¹⁻⁴³ showed that the maintenance of paid employment was associated with positive psychosocial outcomes in old age, such as social interactions and psychological well-being. Further studies are needed with older people of lower socioeconomic classes, living in middle and low income countries, to understand whether the permanence in the labor market, driven mainly by financial difficulties, impacts life satisfaction in old age.

The benefit of voluntary work, either for objective indicators of health^{16,17}, either for subjective aspects, such as life satisfaction and positive self-rated evaluation of general health¹⁸, was amply demonstrated in the literature. This study did not examine the practice of volunteer work, and paid work was chosen as research object because this type of occupation is taken in gerontological literature as a category of activity that differs from other productive activities, such as those carried out only in their own domestic environment or held for the purpose of helping the others, as with informal care and volunteering⁴⁴. Thus, although voluntary and paid work are both within the same sphere of social occupation for elderly, it is assumed that they are occupations from different natures and it is suggested that further population-based investigation is developed to compare their benefits among elderly Brazilians.

In addition, the directionality between work variables and life satisfaction was not the focus of this investigation, which followed cross-sectional design. Longitudinal studies should be conduct-

ed to identify if the maintenance of work in old age leads to greater life satisfaction or if it would be the most positive assessment of condition that would function as a profile of the elderly indicator who keeps engaged with work activities. It should also consider the socioeconomic profile of elderly respondents with higher education and higher income than the general elderly population, limits the generalization of associations obtained between the sociodemographic and clinical characteristics and the permanence in the labor market. The profile of the studied population is associated with the population source of the study, composed by customers of a health provider company. This population may represent the Brazilian elderly with access to the private health sector that has been described as a population with better conditions of education and income and, consequently, greater access to care in health than the elderly population with access only to the public health system⁴⁵.

In the gerontology field, the study of satisfaction and paid work in the elderly prioritizes understanding the satisfaction of the elderly with their own work to identify the determinants of early exit from the labor market⁴². The findings of this study corroborate the scientific literature^{31,46-49} pointing social factors as determinants for choosing the continuity of work activities after retirement. In addition to this association with favorable social conditions, such as better education and income, the study has expanded the discussion of the association of conducting paid employment in old age with greater satisfaction with life. Thus, it is understood that the work can act not only as a guarantee of survival for the elderly and their families, but also as a source of satisfaction as a generating element of quality of life. These activities can function as strategies associated with maintaining the well-being and an active attitude of older individuals. In this sense, the results point to the need of the society to organize the expansion of job opportunities for people who want to remain productive until the old age.

Collaborations

PCC Ribeiro worked on the conception, design and supervision of data collection of the study; in the analysis and interpretation of the data and in the writing of the article. DSQ Almada and JF Souto worked on the analysis and interpretation of the data and the writing of the article. RA Lourenço worked on the conception and delineation of the study and on the critical revision of the final essay of the article.

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