

## Quality of life of elderly people and its association with work



*Qualidade de vida de idosos e sua relação com o trabalho*  
*Calidad de vida de los ancianos y su relación con el trabajo*

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### ABSTRACT

**Objective:** To assess the quality of life of working and non-working elderly people.

**Method:** Descriptive study with cross-sectional cohort and quantitative approach, with 113 elderly subjects, conducted from June to September 2014, in a peer group in the city of Cajazeiras-PB, using the WHOQOL-BREF and WHOQOL-OLD sociodemographic questionnaires. Data were analyzed through descriptive statistics and Mann-Whitney and Student's t-tests.

**Results:** The working elderly people had higher mean scores in most WHOQOL-BREF domains and WHOQOL-OLD facets, with emphasis to the Psychological domain (70.0) and the Sensory abilities facet (72.5). A statistically significant difference ( $p=0.046$ ) was found between the two groups in the physical domain.

**Conclusion:** The study demonstrated that work is an important factor for the quality of life of elderly individuals.

**Keywords:** Aged. Aging. Work. Quality of life.

### RESUMO

**Objetivo:** Avaliar a qualidade de vida entre idosos que trabalham e não trabalham.

**Método:** Trata-se de um estudo descritivo, de corte transversal e abordagem quantitativa com 113 idosos, no período de junho a setembro de 2014, em um grupo de convivência no município de Cajazeiras - PB, utilizando-se os questionários sociodemográficos, o WHOQOL-BREF e WHOQOL-OLD. Os dados foram analisados mediante estatística descritiva e testes T de Student e Mann-Whitney.

**Resultados:** A partir da análise observou-se que os idosos que trabalham apresentaram maiores escores médios na maioria dos domínios do WHOQOL-BREF e facetas do WHOQOL-OLD, evidenciando-se o domínio Psicológico (70,0) e a faceta Habilidades Sensoriais (72,5). O domínio físico apresentou diferença estatisticamente significante ( $p=0,046$ ) entre os dois grupos.

**Conclusão:** O estudo demonstrou que o trabalho é um fator importante para a qualidade de vida do idoso.

**Palavras-chave:** Idoso. Envelhecimento. Trabalho. Qualidade de vida.

### RESUMEN

**Objetivo:** Evaluar la calidad de vida entre ancianos que trabajan y que no trabajan.

**Método:** Se trata de un estudio descriptivo, con corte transversal y planteamiento cuantitativo, con 113 ancianos, durante el período comprendido entre junio y septiembre de 2014, en un grupo de convivencia en la ciudad de Cajazeiras-PB, utilizando los cuestionarios sociodemográficos WHOQOL-BREF y WHOQOL-OLD. Los datos fueron analizados por medio de estadística descriptiva y de las pruebas t-Student y Mann-Whitney.

**Resultados:** A partir del análisis, se notó que los ancianos que trabajan presentaron mayores puntuaciones promedio en la mayoría de los dominios del WHOQOL-BREF y facetas del WHOQOL-OLD, haciendo hincapié en el dominio Psicológico (70,0) y en la faceta Capacidades sensoriales (72,5). El dominio Físico mostró diferencia estadísticamente significativa ( $p=0,046$ ) entre los dos grupos.

**Conclusión:** El estudio demostró que el trabajo es un factor importante para la calidad de vida del anciano.

**Palabras clave:** Anciano. Envejecimiento. Trabajo. Calidad de vida.

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## ■ INTRODUCTION

Population aging is becoming a significant global phenomenon in the new century. According to estimates, around 13.4% of the Brazilian population (approximately 30 million people) will be 65 years or older by 2030<sup>(1)</sup>. In view of the social, economic, political and health transformations caused by population aging, providing the elderly with a quality of life (QoL) that allows them to make the most of the experiences provided by increased longevity is a mounting challenge<sup>(2)</sup>.

Based on a cross-culturally sensitive concept, the World Health Organization defines Quality of Life (QoL) as “an individual’s perception of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards and concerns”<sup>(3:1405)</sup>.

QoL concerns individual and collective aspects and is based on elements such as health satisfaction, functional capacity, self-esteem, well-being, life habits, schooling, socioeconomic level, emotional state, social interaction, intellectual activity, self-care, family support, living conditions, safety, cultural and ethical values, religiosity, satisfaction with work and/or with daily activities<sup>(4-5)</sup>.

Thus, in the analysis of the QoL of a given population work emerges as one relevant aspect, especially among the elderly, given the permanence of people over 60 years in the labor market and the extension of working life<sup>(6-7)</sup>. Work is characterized in contemporary society as one of the most important elements in the social context of individuals. It is a key factor for the access to consumer goods and services, social status and (re) construction of subjectivity, and interferes significantly in the health-disease process<sup>(6)</sup>.

The impact of work on the QoL of older persons transcends income-related needs and involves the sense attributed to the labor practice as a concept of identity, valuation and personal development. Thus, work is considered a health-promotion activity that allows greater social participation, independence and autonomy<sup>(4,7)</sup>. However, economic changes in the global labor market had a direct impact on social security systems, and a greater number of older people are choosing to remain in the labor force or re-enter the labor market, a trend that is inversely proportional to the number of job offers for this population<sup>(8)</sup>.

In the capitalist societies of a globalized world, the presence of an elderly population in the work market is a key issue that needs to be thoroughly addressed, especially the relationship between work and quality of life in older people<sup>(6)</sup>. Despite the very positive impact of work on the improvement of the QoL of the general population reported

by the literature, studies on the effects of work on elderly individuals are still incipient, especially in Brazil<sup>(7)</sup>.

International studies emphasize the association between work and good health conditions in older people, since retirement is often related to declines in physical, psychological and cognitive capacity, as well as impairment in autonomy, independence, social support and interpersonal relationships<sup>(8-9)</sup>. Therefore, the present study can have a positive impact on the QoL of older people, favoring the prevention of diseases and injuries and promoting the adoption of self-care practices<sup>(8)</sup>.

Given the scarcity of scientific production on QoL and the presence of older people in the labor market, the question to be posed is: Are there differences in the quality of life among working and non-working elderly? What is the impact of work on the quality of life of elderly people?<sup>7(8)</sup>.

Thus, the present study aims to evaluate the quality of life among working and non-working elderly people.

## ■ METHODS

Descriptive cross-sectional study with a quantitative approach, extracted from a dissertation titled “Quality of life of the elderly in the context of work and its social representations”<sup>(10)</sup>, submitted to Universidade Federal da Paraíba, in 2015. The study was carried out with 113 elderly people from a population base of 151 individuals enrolled in the peer groups of the Trade Social Service (SESC), located in the city of Cajazeiras – PB.

The inclusion criteria were individuals aged 60 years or older attending the activities promoted by the peer group during the data collection period and having cognitive or mental capacity assessed by the Mini Mental State Examination - MMSE<sup>(11)</sup>. After application of these criteria, 38 subjects were eliminated, as follows: 9 were excluded because they did not reach the minimum score in the MEEM, 16 did not attend the activities promoted by the peer group during the collection period, and 13 refused to participate in the study.

The participants were divided into two groups: one composed of elderly people who worked in the formal or informal market, and the second group included non-working elderly individuals. Data collection was carried out by previously trained researchers from June to September 2014, through application of an interview composed of two parts: the first part concerning sociodemographic characterization data and the second part related to the application of the WHOQOL- BREF and WHOQOL-OLD questionnaires regarding quality of life. The two instruments were chosen because the WHOQOL-OLD com-

plements the WHOQOL-BREF, and the application of both instruments provide an overall assessment of the QoL of the elderly population<sup>(12)</sup>.

The WHOQOL-BREF instrument consists of 26 items grouped in four domains: physical, psychological, social relationships and environment. The items contain Likert-type response options. The first two questions concern general aspects on quality of life and the remaining 24 questions represent each of the 24 facets of which the original instrument is composed<sup>(13)</sup>. Each domain includes questions with scores ranging from 1 to 5. The results range from 0 to 100, with values closer to zero indicating worse results and values closer to 100 indicating better results.

The WHOQOL-OLD questionnaire is a 24-item, 6-facet instrument designed for assessing QoL of older adults, with an additional domain that incorporates aging-related questions. The additional facets of the WHOQOL-OLD are sensory abilities; autonomy; past, present and future activities; social participation; death and dying (concerns about death and dying) and intimacy (ability to have intimate and personal relationships)<sup>(14)</sup>.

The data collected was entered in a Microsoft Excel spreadsheet, using double data entry to reduce errors and ensure the reliability of data compilation. Next, the data was imported to SPSS software (Statistical Package for the Social Science) for Windows, version 22.0.

Data related to the categorical variables of the first part of the instrument were subjected to descriptive statistics with absolute (n) and percentage (%) frequencies, as well as position and dispersion measurements - mean, standard deviation, minimum, maximum and median values, for the numerical variables. Kolmogorov-Smirnov test was used to verify the normality of the numerical variables. In the comparison of means between the two groups of elderly individuals, Student's T test and its non-parametric equivalent,

the Mann-Whitney test, were used, with a significance level of 5% in the study.

Regarding the analysis of the internal consistency of the WHOQOL-BREF and WHOQOL-OLD, Cronbach alpha values were calculated for their domains and facets. The values of this test vary from 0 to 1, but are considered acceptable from 0.70, and the higher the value, the greater the congruence between the items, indicating homogeneity in the measurement of the same phenomenon<sup>(15)</sup>.

The present study was approved by the Research Ethics Committee of Lauro Wanderley University Hospital of Universidade Federal da Paraíba, under protocol CEP/HULW no 261/09. All subjects accepted to participate in the study and signed the Free and Informed Consent Form. Also, all ethical principles established by Resolution 466/2012 of the Ministry of Health, National Health Council, National Commission on Ethics in Research, as well as the guidelines and norms governing research involving human beings were observed.

## ■ RESULTS

A total number of 113 elderly adults participated in the study: 50 (44.2%) of them perform work activities and 63 (55.8%) do not work. The first group consisted mostly of elderly women (62%), aged 60-64 years (32%), married (56%), who had incomplete primary education (48%), a monthly family income ranging from 1 to 3 minimum wages (48%), were retired (72%), lived with their spouses and children (30%) and were catholic (80%).

In the non-working elderly group, there was a prevalence of female subjects (87.3%), aged 65-69 years (28.6%), married (47.6%), (61.9%), who had a monthly family income of 1 to 3 minimum wages (65.1%), were retired (90.5%), lived only with their spouses and were catholic (92.1%).

**Table 1** – Characterization of elderly according to sociodemographic data and work. Cajazeiras - PB, 2014 (n=113)

Variables	Work			
	Yes		No	
	n	%	n	%
Gender				
Female	31	62.0	55	87.3
Male	19	38.0	8	12.7
Age range				
60-64 years	16	32.0	17	27.0
65-69 years	14	28.0	18	28.6
70-74 years	6	12.0	17	27.0
75-79 years	9	18.0	8	12.7
80 years or older	5	10.0	3	4.8

Marital status				
Single	8	16.0	9	14.3
Married	28	56.0	30	47.6
Divorced	1	2.0	3	4.8
Widowed	13	26.6	21	33.3
Education				
Illiterate	4	8.0	3	4.8
Incomplete primary education	24	48.0	39	61.9
Complete primary education	3	6.0	6	9.5
Incomplete secondary education	4	8.0	6	9.5
Complete secondary education	4	8.0	5	7.9
Incomplete higher education	1	2.0	-	-
Complete higher education	10	20.0	4	6.3
Monthly family income				
Up to 1 minimum wage	5	10.0	10	15.9
Between 1 and 3 minimum wages	24	48.0	41	65.1
Between 4 and 5 minimum wages	15	30.0	10	15.9
More than 6 minimum wages	6	12.0	2	3.2
Retired				
Yes	36	72.0	57	90.5
No	14	28.0	6	9.5
Family arrangement				
Living alone	7	14.0	7	11.1
Spouse only	9	18.0	15	23.8
Spouse and children	15	30.0	12	19.0
Spouse, son, son-in-law/daughter-in-law	1	2.0	4	6.3
Children only	7	14.0	4	6.3
Three-generation arrangement	6	12.0	10	15.9
Intragenerational arrangement	3	6.0	4	6.3
Spouse and grandchildren	2	4.0	1	1.6
Grandchildren only	-	-	5	7.9
Other relatives	-	-	1	1.6
Religion				
Catholic	40	80.0	58	92.1
Evangelical	6	12.0	3	4.8
No religion	4	8.0	2	3.2
Total	50	44.2	63	55.8

Source: Research data, 2014.

The QoL measured in the two elderly groups by the WHOQOL-BREF showed a higher mean score for the Psychological domain (68.2) and a lower mean score for the Environmental domain (60.0), while the WHOQOL-OLD facets showed a higher score in the Death and Dying facet (72.1) and a lower score in the Social Participation facet (62.9). The internal consistency of the instruments measured with Cronbach's alpha has a satisfactory level for the domains and facets investigated (Table 2).

The **Physical** domain of WHOQOL-BREF showed a statistically significant difference ( $p = 0.046$ ) between the groups. The working elderly had higher mean scores for almost all domains of QoL, especially the **Psychological** domain (70.0). Among the non-working elderly the highest scores were reported in the Psychological and Social Relations domains, both with a mean of 66.8. The Environmental domain showed lower scores for both working and non-working elderly (59.5 and 60.4, respectively).

The working elderly showed higher mean scores in the **Sensory Abilities** facet (72.5) and lower scores in the **Social Participation** facet (62.8) in the WHOQOL-OLD instru-

ment, while the non-working group had higher mean scores in the **Death and Dying** facet (72.0) and lower scores in the **Autonomy** facet (62.1), as shown in Table 3.

**Table 2** - Descriptive statistics and internal consistency of the WHOQOL-BREF domains and the WHOQOL-OLD facets. Cajazeiras - PB, 2014 (n=113)

Domains/Facets	Mean (SD)	Median	Minimum	Maximum	Cronbach's alpha
WHOQOL-BREF					
Physical	65.7 (13.8)	67.9	35.7	100.0	0.778
Psychological	68.2 (12.2)	70.8	20.8	91.7	0.776
Social relationships	67.7 (14.4)	66.7	25.0	100.0	0.773
Environmental	60.0 (9.9)	59.3	31.3	84.4	0.773
WHOQOL-OLD					
Sensory abilities	71.8 (18.0)	75.0	37.0	93.8	0.774
Autonomy	63.1 (13.0)	62.5	25.0	100.0	0.789
Past-Present-Future Activities	64.3 (14.1)	68.8	25.0	93.8	0.767
Social participation	62.9 (12.6)	62.5	31.3	93.8	0.769
Death and dying	72.1 (19.6)	81.3	25.0	100.0	0.790
Intimacy	68.2 (18.1)	75.0	6.3	100.0	0.771

Source: Research data, 2014.

**Table 3** - Descriptive statistics and internal consistency of the WHOQOL-BREF domains and WHOQOL-OLD facets. Cajazeiras - PB, 2014 (n=113)

Domains/Facets	Work		p
	Yes Mean (SD)	No Mean (SD)	
WHOQOL-BREF			
Physical	68.6 (14.3)	63.4 (13.0)	0.046*
Psychological	70.0 (11.8)	66.8 (12.5)	0.157*
Social relationships	68.8 (17.6)	66.8 (11.3)	0.231**
Environmental	59.5 (9.9)	60.4 (10.1)	0.630*
WHOQOL-OLD			
Sensory abilities	72.5 (17.9)	71.3 (18.3)	0.691**
Autonomy	64.4 (12.4)	62.1 (13.6)	0.361*
Past-Present-Future Activities	65.5 (14.3)	63.4 (14.0)	0.443*
Social participation	62.8 (14.4)	62.7 (11.0)	0.918*
Death and dying	72.2 (19.5)	72.0 (19.6)	0.952*
Intimacy	67.1 (20.2)	69.0 (16.4)	0.588*

Source: Research data, 2014.

\*T-Student; \*\* Mann-Whitney U test.

## ■ DISCUSSION

Most of the elderly investigated in the study did not work. However, many were engaged in the informal sector, working

as farmers, artisans, and self-employed vendors. Analysis of the sociodemographic profile of the two groups of elderly individuals showed that they were similar: most were women, married, with incomplete primary education, monthly

income of 1-3 minimum wages, retired and catholic. The differences between the two groups were as follows: aged 60-64 years and family arrangement formed by spouse and children in the group of working elderly, and aged 65-69 years and family composed of spouse for the non-working elderly.

The differences in the sociodemographic characteristics of the two elderly groups impact the health status and QoL of the participants, since the working elderly were younger and lived with a larger number of relatives compared to the non-working elderly. Thus, work can be associated with higher quality of life, since older people are often responsible for the maintenance of family expenses, especially in Brazil. For this reason, the elderly feel they have to continue working for financial reasons, because the retirement pension is often not sufficient to meet even their personal expenses<sup>(6,8)</sup>.

The fact that many elderly people are compelled to work due to financial difficulties does not mean that work causes suffering to these individuals. On the contrary, many people feel happy and have positive experiences associated with work, which may lead to greater personal and professional satisfaction, and hence, higher QoL<sup>(9)</sup>.

Work is considered a positive element for the elderly, being associated with protection against the decline of the sensory function, mental and behavioral disorders, functional incapacity and fragility, health promotion and active aging, besides providing greater independence in daily activities and in the decision-making about their future<sup>(7)</sup>. Also, the extra money earned by these elderly can be very useful, as they have to cope with the high costs of treatments and drugs. This will certainly have a positive impact on the improvement of health conditions, housing, security and access to consumer goods and services<sup>(6-7)</sup>.

Regarding QoL, the scores indicate a satisfactory level in the WHOQOL-BREF domains and in the WHOQOL-OLD facets when compared to the maximum score (100.0%) of the scores. The **Physical** domain differed significantly between the two groups, with a higher mean score for the working elderly. This domain evaluates pain and discomfort, energy, fatigue, sleep, rest, mobility, daily life activity, dependence on medications, treatments and ability to work<sup>(12)</sup>.

Fewer health problems were observed among the working elderly, with a consequent reduction in the number of the daily medications taken. Most non-working elderly had associated comorbidities, especially systemic arterial hypertension, diabetes mellitus and diseases of the musculoskeletal system and connective tissue. Therefore, work may have a positive impact on the health and functional capacity of the elderly, justifying the higher values of this group in the **Physical** domain.

In contemporary society, work is an extremely important element that overcomes the needs imposed by the globalized and capitalist world, exerting a strong influence on the singular aspects of each subject, such as leisure, interpersonal relations, health perception, professional fulfillment, personal satisfaction, among others<sup>(16)</sup>. For the elderly, work is also associated with their self-image and identity as productive individuals with physical capacity to perform activities<sup>(16)</sup>, that is, as healthier people, both physically and mentally<sup>(7)</sup>.

Regarding the **Psychological** domain, both groups obtained satisfactory scores for QoL, which can be explained by the participation of the elderly in peer groups, because these spaces allow the establishment of friendship and emotional bonds, trust, leisure opportunities, guidance on health and self-care, practice of physical activity and encouragement for interaction with other people, in addition to promoting greater social support and resilience in these individuals<sup>(17-18)</sup>.

In these peer groups, the participants reflect on the meanings of aging and the construction of new social identities. Thus, old age is no longer perceived as something negative<sup>(17)</sup>. Many active elderly people satisfied with their general condition participate in these groups, and this improves their functional capacity, health conditions, social inclusion and QoL<sup>(7,18-19)</sup>.

Although all the participants of the present study attend the activities promoted by the peer group, the working elderly obtained higher scores (medias?) in the Psychological domain, which stresses the importance of work for a better QoL among this population. The psychological factors associated to intelligence and cognitive ability are indicators of active aging and longevity, and are often stimulated during work activities<sup>(8)</sup>. Thus, the more active the elderly, the greater their satisfaction with health and the better they will cope with adversity, resulting in a higher QoL<sup>(4)</sup>.

Also, the collective dimension promoted by social interaction and interpersonal relationships in the work environment allows greater social inclusion and support offer, which results in the prevention and/or reduction of negative feelings, helps improve health and favors adherence to self-care practices<sup>(20)</sup>. Moreover, when the elderly remain in the labor market, they also remain close to their colleagues with whom they have lived together for a long time and perform the actions with which they are accustomed. This protects them against psychological impairment caused by retirement and the problems generated by the gradual decline of organic functions, promoting active and healthy aging<sup>(6-7)</sup>.

There was no significant difference between the groups in the **Social Relations** domain. However, the non-working elderly had a higher mean score. Such finding

could suggest that non-working/retired elderly people can maintain their social ties or establish new interpersonal relationships with different individuals, which are strengthened by their participation in the activities of peer groups. Adapting to the changes imposed by old age is necessary and requires adjustments, so that the elderly maintain their ability to solve problems, as well as create bonds, support networks and social support<sup>(4-5)</sup>.

The **Environmental** Domain of the WHOQOL-BREF concerns issues that address the individual's physical security and environment, financial resources, opportunities to acquire new information, recreation, leisure, access to and availability of health care resources, and satisfaction with transportation<sup>(14)</sup>. This domain had the lowest mean score for both groups, which could be related to the low level of education of most of the elderly, since individuals with low educational level are less likely to acquire new information/knowledge, and accessing, searching and implementing the necessary care for the maintenance of health or prevention of disorders is also more difficult for them<sup>(18)</sup>.

Regarding the facets of the WHOQOL-OLD, it was found that the working elderly had higher mean scores in aspects related to Sensory Abilities. This facet evaluates the sensory functioning and the impact of the loss of sensory abilities on QoL. Satisfactory sensory functioning could be related to the performance of work activities, since work can favor the multidimensional interaction of the individual, independence in several routine aspects, autonomy, integration and social support, with a positive effect on the QoL of older individuals<sup>(6,8)</sup>.

The **Social Participation** facet obtained the lowest mean score for QoL. It assesses the degree of personal satisfaction with daily activities, time spent on such activities, and opportunities to participate in community activities<sup>(13)</sup>. These results demonstrate that work does not impact the social participation of elderly, since their participation in the peer group and their performance during the activities carried out in this environment can provide significant social participation, even for elderly who do not perform labor activities.

The **Death and Dying** facet showed high scores for both groups revealing that work had no impact on the perception of this facet. Because of their spirituality and faith, the elderly were more likely to accept aging, perceiving death as the natural stage of the evolutionary process. Moreover, the elderly who participated in this study were considered active as they participate in peer groups, have good social relations, as well as religious beliefs, which tends to alleviate their concerns about death.

The non-working elderly had the lowest mean score in the Autonomy facet, since they depend on the retirement

pension and/or in support from their families to cover their daily expenses, which reduces their financial independence, and compromises their ability to decide on various aspects related to their daily life, hence resulting in impairment of their QoL<sup>(8-9)</sup>.

## ■ CONCLUSION

QoL had positive scores in the WHOQOL-BREF domains and WHOQOL-OLD facets for both groups. The "Physical" domain showed a statistically significant association, with higher scores for the working elderly, and it can be inferred that work has a positive impact on the physical health of the elderly. The permanence of the elderly in the workplace preserves their physical and mental, health, autonomy, cognitive and sensory abilities and improves their QoL. This was demonstrated in the higher scores in the "Physical" and "Psychological" domains and in the "Sensory Abilities" facet.

The findings of this study demonstrate that working elderly require special care from the nursing team, because such care involves issues related to ability to work, reduction of occupational risks, early detection of health problems generated by the work activity and encouragement for the adoption of safe practices, aiming to the prevention of accidents. Thus, permanence or re-entry of elderly in the workplace should be routinely investigated during nursing appointments for the identification of workplace conditions that could have a negative impact on the health status of these individuals or aggravate pre-existing problems, to help these individuals perform their work activities in a healthier and more pleasant way and with higher QoL.

As for the non-working elderly, the lowest scores were obtained in the "Environmental" domain and in the "Autonomy" facet, which may be associated with loss of QoL caused by the daily routine of these individuals, such as physical security and environment, financial resources, access to information, recreation and leisure activities, transportation, and access to and availability of health care resources.

The results of the present study demonstrate the importance of a routine multidimensional evaluation during nursing appointments of elderly individuals, since this instrument allows a comprehensive analysis of several aspects related to the life and health of this population, favoring the development of more effective care aimed to promote autonomy and independence, as well as the prevention of injuries and disabilities.

The peer groups are beneficial for both groups of elderly people, as they provide greater social interaction, leisure and recreation opportunities and activities aimed at the

improvement of health conditions and encouragement of self-care practices, to ensure a better QoL.

Given that ensuring a satisfactory aging process should be a relevant concern in contemporary society, it is hoped that this study will stimulate further investigation about this topic, to allow the development of strategies and actions aimed at the reintegration of elderly into the workplace, to promote aging with a satisfactory QoL.

The fact that only elderly people who participate in peer groups were investigated is one limitation of the present study, for it does not allow generalization of the results. This gap can be explored in future studies focused on working elderly involved in other activities.

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