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QUALITY OF LIFE OF ELDERLY INDIVIDUALS RECEIVING LITERACY TRAINING: A LONGITUDINAL STUDY

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ABSTRACT

Because of population aging in Brazil, educational programs directed to young and adult individuals now have to absorb a large number of 60 year old or older individuals. **Objectives:** Identify the relationships among the variables quality of life, time attending the program, depressive symptoms, and cognitive status; and longitudinally compare the scores concerning the quality of life of these individuals. **Method:** Descriptive, correlational, comparative, longitudinal and quantitative study. The participants were elderly individuals who attended literacy training provided in a Brazilian city from 2012 to 2014. The instruments to collect data included sociodemographic characterization, the WHOQOL-bref, WHOQOL-old, the Geriatric Depression Scale (GDS), and the Mini Mental State Examination. **Results:** The participants were predominantly young-elderly women, with low incomes. Scores obtained on the GDS were related with the domains: Physical ($p<0.05$); Environment ($p<0.01$); Autonomy ($p<0.01$), Past, Present and Future Activities ($p<0.05$), Intimacy ($p<0.01$); and Social Relationships ($p<0.01$). The scores concerning cognition were related to the Autonomy domain ($p<0.01$). The physical domain of quality of life presented significant worsening in 2013 when compared to 2012 ($M_1=70.23$; $M_2=61.20$; $M_3=62.40$). These results cannot be generalized because they concern only elderly individuals receiving literacy training provided in a midsized city in the interior of São Paulo, Brazil.

Descriptors: Geriatrics; aging; quality of life; literary; education.

INTRODUCTION

In 2013, Brazil had the eighth highest number of illiterates in the world (United Nation Educational, Scientific and Cultural Organization, 2013). More recent data from the Brazilian Institute of Geography and Statistics (IBGE) reveal that 13.2 million 15 year-old or older individuals, about 8.7% of the Brazilian population, do not read or write. This rate had been in steady decline since 1998, but is on the increase again. In 2011, there were 12.9 million illiterates, equivalent to 8.6% of the Brazilian population, while in 2004 the rate of illiteracy reached 11.5% (Instituto Brasileiro de Geografia e Estatística, 2012). Illiteracy in Brazil presents higher rates among older individuals in all the regions. The rate of illiteracy among those between 15 and 19 years of age was 1.2%, compared to 1.6% among 20 to 24-year old individuals, 2.8% among 25 to 29-year old, 5.1% among 30 to 39-year old individuals, 9.8% among 40 to 59-year old, and 24.4% among 60-year old or older individuals (Instituto Brasileiro de Geografia e Estatística, 2012).

In this context, we reinforce the importance of the *Educação de Jovens e Adultos* [Youth and Adult Education] program, which is designed to include young and adult individuals in classrooms and

has its own characteristics and specific methodology. The program is based on the following: law No. 9.394 from December 20th 1996, which establishes the guidelines and standards for national education; the resolution of the National Council of Education/Basic Education Assembly (CNE/CEB) No. 1 from July 5th 2000, and CEB referee report No. 11 2000, which establishes the national curricular guidelines for the education of young and adult individuals.

This is a policy with perceptible benefits in all spheres of life. Hence, the objective is to overcome this deficiency, an urgent issue of large proportions in Brazil, which represents a barrier and prevents Brazilians from fully exercising their rights.

According to the IBGE, approximately 5% of the Brazilian population was considered to be elderly in the 1970s. In 2010, this percentage doubled (9.2%) and it is estimated that this population will grow 123% by 2050 (Instituto Brasileiro de Geografia e Estatística, 2010), meaning Brazil will rank sixth in the number of elderly individuals. This process began a little over a decade ago and has developed notoriously quickly in the country and is a major challenge in this century, demanding satisfactory actions to ensure the rights and quality of life of individuals for active, healthy and dignified aging (Oliveira, 2013).

This contemporary contingent of elderly individuals has increasingly presented new social behaviors and is currently seeking alternatives for greater social inclusion. The participation of elderly individuals in literacy programs has grown, especially among women. These elderly individuals become more active, reject the negative aspects of aging and seek new opportunities for social inclusion.

Education directed to elderly individuals is established in the National Elderly Policy (Law 8842/1994) and in the Elderly Statute (Law 10741/2003). These laws make explicit the importance of the government encouraging and supporting the implementation of continuous education programs for elderly individuals and universities open to receiving elderly individuals. The legal system, however, does not present a specific policy for 60 year-old or older individuals to be included in educational policies directed to young and adult individuals that would contribute to fighting prejudice against illiteracy and aging individuals.

Barnes and Yaffe (2011) conducted a systematic review addressing potentially modifiable risk factors for Alzheimer's disease (AD), revealing that low educational attainment is the most prevalent risk factor for AD. Low educational levels are potentially accountable for 19% (6.5 million) of AD cases around the world. The authors show, through statistical projections, that reducing the prevalence of low education attainment by 10% has the potential to reduce the prevalence of AD by more than 500,000 cases, while a reduction of 25% could reduce the prevalence of AD by approximately 1.4 million cases around the world.

Marques (2009) discusses education and asserts that it is the main means to overcome the challenges currently posed to elderly individuals, as new knowledge and opportunities enable these individuals to seek physical and emotional well-being; lack of reading and writing skills is a barrier to many seniors.

Cachioni and Neri (2004) observe that education provided in senior universities favor successful aging as they promote cognitive flexibility and personal adjustment, subjective well-being and individuals having a positive social image.

Ordonez, Batistoni and Cachioni (2011) investigated the prevalence of depressive symptoms among elderly individuals attending a senior university based on the length of time individuals had attended. A total of 140 elderly individuals (31 men and 109 women) aged 64.5 years old on average participated in the study. The authors concluded that having attended a senior university for a semester significantly diminishes depressive symptoms. Based on these results, the authors also emphasize that the social participation of elderly individuals can improve their quality of life as they remain active and independent for longer periods.

In 2012, Kissaki et al. verified whether the participation of elderly individuals in a senior university would contribute to maintaining their cognitive performance. A total of 180 elderly individuals (M=64.9 years old, SD=5.8), 51 men and 129 women, were interviewed at the beginning and end of their attendance of the university in 2010. The authors found significant positive association between schooling and performance on cognitive tests and an inverse relationship between schooling and depressive symptoms.

Campolina, Pinheiro, Ciconelli and Ferraz (2011) assessed the quality of life of Brazilian adults applying SF-8 to a random sample of 2,420 people over 40 years of age living in different geographic regions of Brazil (725 men and 1,695 women). Women presented the worst quality of life on all the subscales compared to men, with the exception of vitality. A progressive decrease in quality of life was found to be associated with aging on the different subscales and most subscales showed that quality of life increased as the individuals presented more years of schooling.

From this perspective, the studies show a close relationship between education and quality of life among elderly individuals and this contemporary subject has assumed great importance in many respects.

Quality of life is a comprehensive concept due to its multidimensional and subjective nature. Even though there is no single definition for quality of life, the most commonly used definition is the one proposed by WHO: "the perception of individuals' 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." (WHOQOL group, 1994, p.42).

Quality of life and aging have been increasingly investigated. Even though authors associate the quality of life of elderly individuals with the health field, it is important to note that the concept of quality of life has a multidimensional nature and should also include other domains such as education.

According to Rocha and Bartholo (2010, p.22), "quality of life comprises many meanings that reflect knowledge, experiences and values, both of individuals and collectivities, and such meanings express the historical moment, social class and culture to which one belongs".

Studies conducted with elderly individuals attending senior universities have shown that the more years of schooling, the better the quality of life (Castro, 2007; Kretzer, Guimarães et al., 2010). No studies were found so far that assess the quality of life of elderly individuals receiving literacy training in Brazil.

According to IBGE's demographic census, 14,213 individuals attending classes administered by the Youth and Adult Education program were 60 years old or older, while approximately 70.7% of these individuals were receiving literacy training, i.e., attending from the 1st to 4th grades (Instituto Brasileiro de Geografia e Estatística, 2011).

The study conducted by Oliveira (2013) was intended to analyze the theses and dissertations defended in Brazil from 2000 to 2011 that addressed education provided to seniors and senior universities. The author reports that of the 135 theses and dissertations registered in this period, 27 addressed this topic. In regard to the methodology used, three were bibliographic and documentary research and one was a case study. Field research was performed by 15 of the studies analyzed. Qualitative research predominated, while two studies had both qualitative and quantitative designs.

According to Oliveira (2013), 10 studies reported education has a positive impact, as it enables the acquisition of information and new knowledge, enlarges one's circle of friends, improves quality of life and health status, enables greater social inclusion and participation, the development of new skills, and empowers individuals to fully exercise their rights.

In this sense, seeking to fill in this gap, the objective of this longitudinal study was to compare the quality of life of individuals attending the Youth and Adult Education program implemented in São Carlos, SP, Brazil from 2012 to 2014, as well as to assess the relationship between quality of life and depressive symptoms, cognition, and duration of attendance.

METHOD

This is a descriptive, comparative and correlational study with a longitudinal design based on the assumptions of the quantitative method.

Ethical criteria were complied with and data collection was initiated only after approval was provided by the Institutional Review Board (Referee report No. 72055/2012 Referee report No. 277.356/2013).

Participants

The study was conducted with all those aged 60 years old or older receiving basic education (literacy from 1st to 4th grades) provided by the Youth and Adult Education program in the aforementioned city and who consented to participate and remained in the program in 2012, 2013 and 2014 (n=15). The students attended different schools distributed in the different regions.

Procedure for data collection and analysis

Data were collected from June 2012 to May 2014. Previously scheduled individual interviews were conducted with elderly individuals on the premises of the schools they attended in areas specifically designated for this purpose. Data were organized in an electronic database using a spreadsheet in the Statistical Package for Social Sciences, version 19.0.

Descriptive analyses were presented in tables with frequency and measures of position (mean, median, minimum and maximum) and dispersion measures (standard deviation – SD). The Shapiro-Wilk test was used to verify normality of data.

The Spearman's correlational test was used to analyze correlation between the variables "quality of life" and "time attending the program", "depressive symptoms", and "cognitive status," while the Friedman test was used to analyze repetitive measures of quality of life.

Confidence and significance levels were 95% and 5% ($p \leq 0.05$), respectively.

Instruments used to collect data

Sociodemographic characterization: instrument based on the Gerontological Assessment Protocol from the gerontology undergraduate program administered at the Federal University of São Carlos addressing age, sex, race, monthly income, marital status, and duration of program attendance.

Quality of life assessment: the WHOQOL-bref and WHOQOL-old were used. Both were validated by the WHO to assess quality of life in diverse domains, that is, one's perception in regard to his/her context of life. The WHOQOL-bref is a generic instrument assessing overall quality of life. It was developed in 1998 to meet the need for an instrument that could be rapidly applied. It is

the abbreviated version of the WHOQOL-100 and presents 26 questions distributed into four domains: physical, psychological, social relationships and environment. Of these, two questions are general questions addressing quality of life and the remaining 24 questions each represent the 24 facets that compose the original instrument. The instrument was validated in Brazil in 2000 by Fleck et al.. The results are obtained after the answers are transformed into scores per domain, ranging from 0=worst to 100=best. There is no single number summarizing the entire assessment; it results in an overall state: worst or best quality of life. The WHOQOL-old emerged from the WHOQOL group's desire to develop an instrument to assess quality of life among seniors. Its development is justified by the fact that one cannot simply apply the same variables used in the WHOQOL-100 and WHOQOL-bref to the elderly population because there are specificities to be verified in this age group. Considering the subjective nature of quality of life and its multidimensional nature, the WHOQOL-old is a modular instrument to assess quality of life, validated for the Brazilian context, that should be applied together with the WHOQOL-100 or the WHOQOL-bref. It is composed of 24 items using a Likert scale assigned to six facets: sensory functioning; autonomy; past, present, and future activities; social participation; death and dying; and intimacy.

Assessment of depressive symptoms

The Geriatric Depression Scale (GDS), 15-item version, developed by Sheikh and Yesavage (1986) and validated in Brazil by Almeida and Almeida (1999), was used. Individuals have to answer yes or no after each question. A score between six and 10 indicates the presence of mild depressive symptoms and a score equal to or higher than 11 characterizes severe depressive symptoms.

The screening of cognitive changes

The Mini Mental State Examination (MMSE) is an instrument used worldwide that addresses different cognitive dimensions. It was developed by Folstein, Folstein, and McHugh (1975) and translated, adapted and validated in Brazil by Bertolucci, Brucki, Campacci and Juliano (1994). It involves different categories of verbal and non-verbal responses that quantify the following cognitive aspects: special and temporal orientation; immediate memory, recall, and procedural memory; attention; language; and visual constructional ability. The test is composed of 12 items and its maximum score is 30 points. The cut-off point, i.e., the score indicating the potential presence of cognitive changes, varies according to the individuals' level of education. The grades proposed by Brucki, Nitrini, Caramelli, Bertolucci and Okamoto (2003) were used.

RESULTS

Participant characterization

Individual interviews were held with 15 elderly individuals attending literacy classes administered by the Youth and Adult Education program in São Carlos, SP, Brazil from 2012 to 2014.

Of these, 93.3% (n=14) were women and 6.7% (n=1) was a man. The individuals were 67.1 years old on average (SD=5.85) while individuals aged 60 to 64 years old predominated.

In regard to marital status, most were married (46.7%; n=7), followed by widowed individuals (40%; n=6). Most (60%; n=9) were Catholic; 80% (n=12) self-reported being Caucasian; and 60% (n=9) presented individual incomes from 1 to 2 times the minimum wage (Table 1).

Sociodemographic Variables	n	%
Sex		
Female	14	93,3
Male	1	6,7
Age group (years)		
60 to 64 years old	6	40
65 to 69 years old	5	33,3
70 to 74 years old	2	13,3
75 to 79 years old	2	13,3
Marital Status		
Single	0	0
Married	7	46,7
Widowed	6	40
Divorced or separated	2	13,3
Ethnicity		
Caucasian	12	80
Mixed	1	6,7
Afro-descendant	2	13,3
Religion		
Catholic	9	60
Evangelical	6	40
Individual income		
No individual income	0	0
Up to 1 times the minimum wage	4	26,7
From 1 to 2 times the minimum wage	9	60
From 2 to 3 times the minimum wage	2	13,3

Table 1. Distribution of elderly individuals attending the educational program directed to young and adult individuals, according to sociodemographic variables. São Carlos, SP, Brazil 2012

Source: Study's data

The domestic structure of the elderly individuals interviewed was heterogeneous, while more than half were multigenerational: 26.66% (n=4) were composed by the spouse; 20% (n=3) were composed only by child(ren); 13.33% (n=2) included the spouse, child(ren) and grandchild(ren); 6.66% (n=1) included child(ren) and grandchild(ren); and 8.7% (n=1) included other relatives such as siblings, in-laws, and nieces or nephews. None of the participants mentioned anyone without kinship as being part of the domestic structure, while 26.66% (n=4) of the interviewed participants reported living by themselves. Duration of attendance ranged from six months to 13 years.

The assessment of mood symptoms using GDS-15 showed that 60% (n=9) of the individuals did not present depressive symptoms and 40% (n=3) presented mild depressive symptoms.

The assessment of cognitive symptoms performed through the MMSE revealed that 80% (n=12) of the participants presented no signs of cognitive dysfunction; i.e., scores were above the cut-off point established according to the respondents' educational levels.

The domain concerning quality of life assessed by the WHOQOL-bref and WHOQOL-old that presented the best score was Sensory Functioning (M=80, SD=12.1), while the one presenting the worst score was Environment (M=61.45, SD=13.1) (Table 2).

	Description (n=15)		
	Lowest score (minimum)	Highest score (maximum)	Mean
WHOQOL-bref			
Physical domain	50	96,42	70,23, \pm 12,4
Social Relationships domain	37,5	95,83	68,05, \pm 13,6
Psychological domain	33,33	100	64,44, \pm 16,5
Environment domain	40,63	87,5	61,45, \pm 13,1
WHOQOL-old			
Sensory functioning domain	56,25	100	80, \pm 12,1
Autonomy domain	43,75	100	70, \pm 17,5
Past, present and future activities domain	56,25	93,75	75, \pm 10,3
Social participation domain	18,75	87,5	65,41, \pm 19,7
Death and dying domain	31,25	100	62,5, \pm 21,4
Intimacy domain	0	100	67,5, \pm 30,1

Table 2. Descriptive analysis concerning the quality of life of elderly individuals receiving literacy training assessed through WHOQOL-bref and WHOQOL-old. São Carlos, SP, Brazil 2012

Source: Study's data

Relationship between attendance in the program, depressive symptoms, cognitive status, and quality of life of elderly individuals in 2012

The correlational analysis among duration of attendance, depressive symptoms, and cognitive status variables, quality of life, and years of schooling did not present any relationship with any domain of quality of life. The GDS score, however, was moderately and inversely proportional to the total scores of the domains: Physical ($\rho = -0.588$, $p < 0.05$), Environment ($\rho = -0.714$, $p < 0.01$), Autonomy ($\rho = -0.655$, $p < 0.01$), Past, Present and Future Activities ($\rho = -0.526$, $p < 0.05$), and Intimacy ($\rho = -0.710$, $p < 0.01$), and presented strong and inversely proportional relationship with the Social Relationships domain ($\rho = -0.852$, $p < 0.01$), while the cognition scores obtained through the MMSE presented moderate and directly proportional relationship with the total scores of the Autonomy domain ($\rho = 0.668$, $p = 0.007$). (Table 3).

Quality of Life domains	Time of attendance		Scores obtained on the Geriatric Depression Scale		Scores obtained on the Mini Mental State Examination	
	ρ	p-value	ρ	p-value	ρ	p-value
Physical	-0,394	0,146	-0,588*	0,021*	0,305	0,268
Social relationships	-0,423	0,116	-0,852*	0,000*	0,428	0,112
Psychological	-0,174	0,536	-0,429	0,111	0,665	0,122
Environment	-0,254	0,362	-0,714*	0,003*	0,333	0,225
Sensory functioning	0,051	0,858	-0,493	0,062	-0,065	0,818
Autonomy	-0,216	0,440	-0,655*	0,008*	0,668*	0,007*
Past, present and future activities	-0,160	0,568	-0,526*	0,044*	0,353	0,197
Social participation	0,027	0,923	-0,436	0,104	0,395	0,145
Death and dying	0,192	0,493	-0,219	0,432	-0,058	0,837
Intimacy	-0,218	0,436	-0,710*	0,003*	0,416	0,123
*Statistically significant associations						

Table 3. Results of the correlational analysis among the variables duration of attendance in the educational program directed to young and adult individuals and depressive symptoms, cognitive status, and quality of life of elderly individuals. São Carlos, SP, Brazil 2012

Source: Study's data

Quality of life of elderly individuals who attended the program in 2012, 2013 and 2014

The assessment of quality of life revealed an increase in the mean scores from 2012 to 2014 in the domains: Psychological (M1=64.44; M2=71.1; M3=72.77); Environment (M1=61.45; M2=68.75; M3=70.2); and Social Participation ((M1=65.41; M2=74.16; M3=76.66). The comparative statistical analyses, though, did not show significant improvement. The only domain that showed significant difference was the Physical domain, which worsened in 2013 compared to 2012 (M1=70.23; M2=61.20; M3=62.40) (Table 4 and Table 5).

Variables	Year of data collection (n=15)								
	2012			2013			2014		
	Min.	Máx.	Mean	Min.	Máx.	Mean	Min.	Máx.	Mean
WHOQOL-bref									
Physical domain	50	96,42	70,23	42,86	75	61,2	46,43	78,57	62,14
Social relationships domain	37,5	95,83	68,05	33,33	79,17	61,38	41,66	70,83	63,6
Psychological domain	33,33	100	64,44	8,33	100	71,1	33,33	100	72,77
Environment domain	40,63	87,5	61,45	37,5	87,5	68,75	46,88	84,38	70,2
WHOQOL old									
Sensory functioning domain	56,25	100	80,00	31,25	100	72,5	62,5	100	78,75
Autonomy domain	43,75	100	70,00	37,5	100	71,25	37,5	100	71,25
Past, present and future activities domain	56,25	93,75	75,00	31,25	100	71,25	18,75	93,75	65,83
Social participation domain	18,75	87,5	65,41	50	87,5	74,16	37,5	93,75	76,66
Death and dying domain	31,25	100	62,50	37,5	100	64,58	31,25	100	64,58
Intimacy domain	0	100	67,50	18,75	100	74,16	6,25	100	70

Table 4. Descriptive analysis of quality of life of elderly individuals over the course of three years of study. São Carlos, SP, Brazil 2012, 2013 and 2014

Source: Study's data

Quality of Life domain	χ^2	p-value
Physical	6,873	6,873
Social relationships	3,240	3,240
Psychological	3,378	3,378
Environment	2,286	2,286
Sensory functioning	1,911	1,911
Autonomy	0,255	0,255
Past, present and future activities	2,764	2,764
Social participation	2,333	2,333
Death and dying	0,130	0,130
Intimacy	1,216	1,216

*Statistically significant associations

Table 5. Comparative analysis of quality of life of elderly individuals over the course of three years of study. São Carlos, SP, Brazil 2014

Source: Study's data

DISCUSSION

Considering the rate of population aging in Brazil, the Youth and Adult Education programs now have a considerable number of individuals over 60 years of age. Because the rate of illiteracy is high even in old age, many individuals start attending these programs to learn something they have not learned in the past, but which they currently consider important. Additionally, group activities are a way to keep seniors socially engaged, which significantly contributes to their quality of life.

The feminization of old age has been reported in the literature. This phenomenon is also observed among seniors seeking literacy programs, as this study's results show. One of the explanations for this prevalence is that women more frequently seek social inclusion. Another aspect apparent in this study is the predominance of young elderly individuals, aged from 60 to 64 years old (40%, n=6).

In 2011, Zielinska-Wiezkowska, Kedziora-Kornatowska and Ciemnoczołowski (2011) investigated quality of life among elderly individuals attending a senior university in the city of Bydgoszcz, Poland, based on sociodemographic data and health status. A total of 257 elderly individuals were interviewed and most were women (n=237) aged 64 years old on average.

Most participants reported being Catholic, though the percentage of evangelicals was expressive (n=6, 40%). According to Instituto Brasileiro de Geografia e Estatística (2010), evangelicals represent 20.3% of the Brazilian population, i.e., more than 34 million people.

Another aspect was the high percentage of elderly individuals living alone. According to the census, there are almost three million seniors living by themselves in Brazil, approximately 14% of the individuals aged over 60 years old (Instituto Brasileiro de Geografia e Estatística, 2010).

In regard to years of schooling of the elderly individuals attending the Youth and Adult Education program, attendance ranged from six months to 13 years in duration. This discrepancy occurs because the students remain in the program (in classes equivalent to 1st through 4th grades) for as long as needed for them to be able to read and write, though there is no evidence in the literature that this occurs in other locations.

The assessment concerning mood symptoms enabled by the GDS showed that 40% of the participants presented depressive symptoms i.e., they scored six or higher. Batistoni et al. (2011) verified the prevalence of depressive symptoms among seniors attending a senior university and only 17 (9.23%) out of the 184 interviewed individuals scored higher than six on the GDS.

The performance obtained on the MMSE presented a relationship with the Autonomy domain concerning quality of life. Kissaki et al. (2012), investigated individuals attending a senior university and verified a significant positive association between schooling and performance on cognitive tests.

The results also show that the elderly individuals presented a mean score between 61.45 and 80 for the different domains of quality of life, measured in 2012. A study conducted with elderly individuals attending a senior university found a mean score between 66.5 and 69.4 and quality of life was related to a higher level of schooling (Zielinska-Wiezkowska, Kedziora-Kornatowska and Ciemnoczowski, 2011).

As expected, years of schooling did not present a statistically significant relationship with any of the quality of life domains. An inverse relationship was found between depressive symptoms and all the quality of life domains, except for the Psychological, Sensory Functioning, Social Participation, and Death and Dying domains.

Farenzena, Argimon, Moriguchi and Portuguese (2007) aimed to assess quality of life in a group of elderly individual in Veranópolis, RS, Brazil and also found statistically significant inversely proportional results ($p < 0.01$) in all the domains of the WHOQOL-bref when correlated with the scores obtained through the GDS (Farenzena et al., 2007).

A Polish study addressing 257 elderly individuals attending a senior university used the WHOQOL-bref to assess quality of life and the GDS to assess depressive symptoms. It reports that the occurrence of depressive symptoms negatively affected the quality of life of the elderly individuals in all the domains, except the Physical domain (Zielinska-Wiezkowska et al., 2011).

This study's results show an increase in the mean scores in the Psychological, Environment and Social Participation domains of quality of life from 2012 to 2014. The analysis of the relationships among the three samples, however, shows that none of the domains presented statistically significant improvement. The Physical domain presented statistically significant worsening in the studied period, which may be related to the aging process itself.

Castro (2007) studied how attending a senior university influences quality of life. The sample was composed of 135 participants and the results led to the conclusion that, in contrast with this study, there was a statistically significant improvement in quality of life according to the overall score obtained by the WHOQOL-bref and specifically in the Psychological and Environment domains with increased participation in the senior university.

In this study, we did not assess or clinically control for the individuals over the course of three years so that the aging process itself may have led to a worsening in the Physical domain (Tamai et al., 2011).

CONCLUSION

According to this study's results, the following conclusions were drawn:

- Most elderly individuals attending the Youth and Adult Education program were young female seniors (from 60 to 64 years old), married, self-reported as Caucasians, Catholic, and presented low individual incomes (from 1 to 2 times the minimum wage).
- Some domains of quality of life are influenced by depressive symptoms (domains: Physical; Environment; Autonomy; Past, Present and Future Activities; Intimacy; and Social Relationships) and cognitive aspects (Autonomy domain).
- In 2012, duration of attendance of the program was not statistically significantly related with any of the quality of life domains.
- The participants presented in 2012 an average score of quality of life ($M=61.45 \pm 80.00$) and despite an increase in the mean scores from 2012 to 2014 in some of quality of life domains (Psychological, Environment, and Social Participation); none of the domains presented statistically significant improvement.

Finally, it is important to note that these results cannot be generalized because they concern only individuals receiving literacy training in a midsized city in the interior of the state of São Paulo, Brazil.

This study's limitations are the lack of a control group and the small number of participants, though the percentage of interviewed individuals was high considering the total of individuals attending the program. Studies specifically addressing illiterate elderly individuals receiving formal education were not found, which limits comparison and discussion of results.

Because this is one of the first studies addressing quality of life among elderly individuals receiving formal literacy training in Brazil, the results reflect the importance of further studies in the field.

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