

SLEEP IN THE CONTEXT OF THE QUALITY OF LIFE OF THE ELDERLY

O SONO NO CONTEXTO DA QUALIDADE DE VIDA DE IDOSOS

SUEÑO Y CALIDAD DE VIDA EN LA TERCERA EDAD

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ABSTRACT

Objective: to analyze satisfaction with sleep in the perception of the quality of life of the elderly. **Methods:** a cross-sectional descriptive study with a convenience sample of 86 elderly people enrolled in a socio-educational project, in *Vale do Paraíba, São Paulo, Brazil*. The perception of quality of life was measured using the WHOQOL-bref instrument and the satisfaction with sleep by facet number 16 of the same instrument. For the characterization of the group, the socioeconomic and health variables were used by means of a self-answered questionnaire. The Spearman's test was used to analyze the correlations between the facets of sleep and the scores of the other quality of life domains. **Results:** the majority of the participants were women (93.02%) between 60 and 69 years old (84.89%). The perception of quality of life showed mean score values of 68.99 for the physical domain, of 68.81 for the psychological domain, of 73.11 for the social relations domain and of 66.19 for the environment domain. The facet satisfaction with sleep presented a correlation with the availability of the necessary information daily ($rs=0.4342$), leisure opportunities ($rs=0.2966$) and satisfaction with the support of friends ($rs=0.2669$). **Conclusions:** the study concluded that the elderly people's satisfaction with sleep is associated with social relationships, leisure and access to information.

Keywords: Quality of Life; Sleep; Aged; Aging.

RESUMO

Objetivo: analisar a satisfação com o sono na percepção da qualidade de vida de idosos. **Métodos:** estudo transversal descritivo com amostra por conveniência de 86 idosos inseridos em projeto socioeducativo, no Vale do Paraíba, estado de São Paulo, Brasil. A percepção da qualidade de vida foi mensurada por meio do instrumento WHOQOL-bref e a satisfação com o sono pela faceta de número 16 do mesmo instrumento. Para a caracterização do grupo utilizaram-se as variáveis socioeconômicas e de saúde por meio de questionário autorrespondido. O teste de Spearman foi utilizado para analisar as correlações entre as facetas do sono e os escores dos demais domínios de qualidade de vida. **Resultados:** a maioria dos participantes eram mulheres (93,02%), entre 60 e 69 anos (84,89%). A percepção de qualidade de vida apresentou valores médios de escores de 68,99 para o domínio físico, 68,81 no domínio psicológico, 73,11 para o domínio de relações sociais e 66,19 para o domínio de meio ambiente. A faceta satisfação com o sono apresentou correlação com a disponibilidade de informações necessárias diariamente ($rs=0,4342$), oportunidades de lazer ($rs=0,2966$) e satisfação com o apoio dos amigos ($rs=0,2669$). **Conclusões:** o estudo concluiu que a satisfação dos idosos com o sono está associada às relações sociais, ao lazer e ao acesso às informações.

Palavras-chave: Qualidade de Vida; Sono; Idoso; Envelhecimento.

RESUMEN

Objetivo: analizar la satisfacción con el sueño desde la percepción de la calidad de vida de la tercera edad. **Métodos:** estudio descriptivo de corte transversal llevado a cabo en Vale do Paraíba, estado de São Paulo, Brasil, con muestra de conveniencia

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de 86 personas mayores incluidas en un proyecto socioeducativo. La percepción de la calidad de vida se midió utilizando el instrumento WHOQOL-bref y la satisfacción con el sueño por la faceta número 16 del mismo instrumento. Para la caracterización del grupo se utilizaron variables socioeconómicas y de salud a través de una encuesta auto-administrada. Se utilizó la prueba de Spearman para analizar las correlaciones entre las facetas del sueño y las puntuaciones de los otros dominios de calidad de vida. **Resultados:** la mayoría de los participantes eran mujeres (93.02%), entre 60 y 69 años (84.89%). La percepción calidad de vida mostró valores de puntaje promedio de 68.99 para el dominio físico, 68.81 para el dominio psicológico, 73.11 para el dominio relaciones sociales y 66.19 para el dominio medio ambiente. El aspecto de satisfacción con el sueño se correlacionó con la disponibilidad de información necesaria diariamente ($r_s = 0.4342$), las oportunidades de ocio ($r_s = 0.2966$) y la satisfacción con el apoyo de los amigos ($r_s = 0.2669$). **Conclusiones:** el estudio concluyó que la satisfacción de las personas mayores con el sueño está asociada con las relaciones sociales, el ocio y el acceso a la información. **Palabras clave:** Calidad de Vida; Sueño; Anciano; Envejecimiento.

INTRODUCTION

Life expectancy has increased both in developed and in developing countries. In Brazil, the elderly population went from 4.10% in 1940 to 10.80% in 2010,¹ with an estimate of reaching 30 million in 2020.¹

Longevity emphasizes the importance of attention in several areas of science, especially health, since Non-Communicable Diseases (NCDs) are more prevalent after 50 years old.² This characteristic of aging combined with changes related to the circadian cycle, sometimes makes it difficult to sleep and to maintain quality of sleep, a basic human need. Its deprivation leads to serious damage to health.³⁻⁵

Interrupted sleep or insomnia in the elderly occur for several reasons, including comorbidities associated with the effects of drugs.^{6,7} Factors indirectly linked to aging can cause sleep disorders and these disorders include restless legs syndrome, sleep apnea syndrome, disorders associated with organ dysfunction, and pain, among others.⁸

Health, sleep and aging also influence the perception of quality of life, which is defined by the World Health Organization (WHO) as “the perception of the individuals of their position in life in the context of the culture and values systems in which they live in relation to their goals, expectations, standards, and concerns”.^{1,9}

Studying the quality of life helps to identify the expectations perceived by the elderly individual and contributes to understanding the complexity inherent to quality of life and to aging. When the object of the study is the elderly person who invests in their healthy aging with

the regular practice of physical activity and healthy eating, the perception of quality of life has shown to have better scores, helping in the preservation of physical, psychological and social aspects, and sleep.¹⁰

Thus, this study aimed to investigate the relation between being satisfied with sleep and the perception of quality of life in the elderly inserted in a socio-educational project.

MATERIAL AND METHOD

A descriptive cross-sectional study with a quantitative approach, carried out with elderly people inserted in a socio-educational project in *Vale do Paraíba, São Paulo, Brazil*. The sample was for convenience and consisted of 86 elderly people who agreed to participate by signing the Free and Informed Consent Form. At the time of the research, the project had 118 enrolled people, excluding those under 60 years old ($n=12$), resulting in a sample loss of 20 elderly individuals who did not want to participate in the research.

For data collection, questionnaires of socioeconomic and health characterization were applied. The variables were the following: gender, age, schooling, if the person has a partner, monthly income, and morbidities.

Quality of life was verified using the WHOQOL-bref instrument in the Portuguese language version, translated and validated by Fleck *et al.*⁹ The four domains were analyzed: physical (pain and discomfort, energy and fatigue, sleep and rest, activity of daily living, dependence on medication or treatments and work capacity), psychological (positive feelings, memory and concentration, self-esteem, body image body and appearance, negative feelings and spirituality, religiosity and personal beliefs), social relationships (personal relationships, social support and sexual activity) and the domain of the environment (physical security and protection, home environment, financial resources, health and social care, opportunities to acquire new information and skills, opportunity for recreation/leisure, physical environment and transportation).⁹ It should be noted that a scale from zero to 100 is considered for each domain and from one to five for each facet, with the values closest to zero referring to the worst perception of quality of life, the closest to 100 for the domains and five for the facet better perception of quality of life.¹⁰

In order to assess the facet related to sleep, which is part of the physical domain, its statistical correlation was performed with the other facets of the instrument that are part of the psychological, social, and environment domains.⁹

The assessment instruments were applied during the activities of the elderly in a socio-educational project

that took place in 2015, the activities offered in that year were the following: circle and ballroom dances, weight training, stretching, lectures with current and health topics, workshop of art - therapy, memory and literature - English, Italian, Spanish, and computer classes. The questionnaires were self-answered and possible doubts were clarified by the volunteer, when raised.

The study was approved by the Research Ethics Committee, under opinion No. 613,677/2014, and respected the ethical principles of Resolution 466/2012 of the National Health Council (*Conselho Nacional de Saúde*, CNS) relating the Ethical Guidelines and Regulatory Rules for Research on Human Beings. All the participants were guaranteed the preservation of dignity, autonomy, the defense of vulnerability and anonymity, thus respecting this resolution.

DATA ANALYSIS

Descriptive analyses were carried out to characterize the sample. The correlation analysis was performed using the Spearman's test with a 5% significance level. The statistical software used was the Statistical Analysis System (SAS®) version 9.4.

RESULTS

The majority of the elderly in the research were female (93.02%), between 60 and 69 years old (84.89%), with a partner (69.77%), with a college degree (40.70%), and with a monthly income of four or more minimum wages (46.51%). In relation to the health aspects, the majority reported having Systemic Arterial Hypertension (SAH), having a medical consultation every six months, and using medication (Table 1).

With regard to quality of life, the highest mean score value was observed in the social relationships domain and the lowest in the environment domain (Table 2). Satisfaction with sleep, assessed by facet 16 of the WHOQOL-bref instrument and inserted to compose the physical domain, had a mean score of 3.80.

When correlating the facet of satisfaction with sleep and the other facets of the psychological, environment, and social relationship domains, a positive correlation was observed with facet 13 (environment domain), on the availability of necessary information daily ($rs=0.4342$), and with facets 14 (environment domain) and 22 (social relationship domain), about leisure opportunities ($rs=0.2966$) and satisfaction with the support of friends ($rs=0.2639$), respectively (Table 3).

Table 1 - Distribution of elderly participants in a socio-educational project regarding the socioeconomic and health characteristics. Vale do Paraíba, São Paulo, Brazil, 2015

Gender	n	%
Female	80	93.02
Male	6	6.98
Age	n	%
60 to 69 years old	73	84.89
70 to 79 years old	13	15.11
Schooling	n	%
Incomplete Primary	7	8.14
Complete Primary	10	11.63
Incomplete Secondary	10	11.63
Complete Secondary	17	19.76
Incomplete Higher education	7	8.14
Higher Education Degree	35	40.70
Marital status	n	%
With a partner	60	69.77
No partner	26	30.23
Monthly income	n	%
Up to 1 minimum wage	18	20.93
2 to 3 minimum wages	28	32.56
4+ minimum wages	40	46.51
Medical consultation	n	%
1 or 2 times per month	7	8.14
4 times per year	20	23.26
2 times per year	34	39.53
1 time per year	25	29.07
Morbidities	n	%
Systemic Arterial Hypertension	38	44.19
Diabetes mellitus	10	11.63
Osteoporosis	15	17.44
Cholesterolemia	10	11.63
Absence of morbidities	13	15.11
Drug treatment	65	75.58
Medical follow-up	6	6.98
Does not use medication	15	17.44
Total	86	100

DISCUSSION

The survey showed a majority of females. This result has also been found in studies to characterize the Brazilian elderly population,^{11,12} showing more concern among women with issues involving aging, such as health care.¹

It is also interesting to note that 69.77% of the elderly analyzed have a partner, similar data to that found by Tavares

Table 2 - Domains of quality of life and of facet 16 (satisfaction with sleep) of elderly participants in a socio-educational project. Vale do Paraiba, São Paulo, Brazil, 2015

Variables	N	Mean	SD*	Minimum	Q1	Median	Q3	Maximum
Physical domain	86	68.99	13.26	46.43	60.71	67.86	78.57	100.00
Psychological domain	86	68.81	12.41	25.00	62.50	70.83	75.00	100.00
Social relations domain	86	73.11	15.18	25.00	66.67	75.00	83.33	100.00
Environment domain	86	66.19	15.13	28.13	59.38	65.63	78.13	96.88
Facet 16 (sleep)	86	3.80	1.01	1.00	3.00	4.00	5.00	5.00

*Standard Deviation.

Table 3 - p values of the correlations observed among facet 16 (satisfaction with sleep) and facets 13, 14, and 22 of the quality of life of elderly participants in a socio-educational project. Vale do Paraiba, São Paulo, Brazil, 2015

Variables	rs	p-value
How available is the information you need in your daily life?	0.4342	0.0003
To what extent do you have opportunities for leisure activities?	0.2966	0.0156
How satisfied are you with the support you get from your friends?	0.2639	0.0323

Spearman's correlation coefficient.

et al.¹³ who, in the assessment of socioeconomic aspects and quality of life in elderly people with cardiovascular diseases, observed 72.30% of the elderly with a partner. When the fact of living alone by choice does not necessarily mean situations of abandonment or loneliness, it can, for example, indicate more autonomy, provided that the financial and health conditions are favorable.¹

Regarding schooling and income, there was a higher proportion of elderly people with complete higher education (40.70%) and a monthly income of four or more minimum wages (46.51%), a percentage higher than that found in the study by Hauser et al.¹⁴, in which 31.9% of the elderly had completed higher education, a fact that may be related to a regional characteristic of the study in question, since the elderly in the research had access and opportunity to attend higher education.¹⁵

The level of education and income can influence the quality of life in different domains. For the elderly, a better socioeconomic status is also associated with less morbidity. Monetary favoring seems to provide more access to leisure activities, more personal satisfaction and a better quality of life.¹² The income can also imply the acquisition of important and sometimes necessary equipment, such as glasses and hearing aids or other health treatments.¹³

The analysis of the health aspects of the elderly surveyed showed that, among health problems, SAH gained a prominent position, being referred in isolation by 44.19% of the elderly, corroborating the Brazilian Guidelines on Arterial Hypertension, which indicates a prevalence of SAH over 60% in the age group above 65 years old.¹⁶

This data refers to risk factors for the NCDs, such as: altered blood pressure levels, obesity and excessive alcohol consumption, consequently, the worsening of physical health.¹⁵ SAH can negatively interfere with quality of life in the following dimensions: functional capacity, general health status, vitality, social and emotional aspects and mental health, thus strengthening, together with the results of this research, the need for educational actions in primary care, with a view to reducing risk factors for NCDs with a consequent improvement in the quality of life of the elderly.¹⁴

In this sense, health care is extremely important and involves access and periodic attendance to medical appointments. Most of the elderly surveyed (39.53%) reported attending medical consultations every six months, an important fact in view of the prevalence of chronic diseases observed during the aging process.²

The data obtained in this study regarding the frequency of medical appointments can also indicate the recognition by the elderly of the weaknesses that the aging process imposes and the importance of health care at this stage of life.

It is also worth noting that the drug treatment prescribed by the doctor was the most mentioned by the elderly with health problems (75.58%). The daily use of more than three medications is among the factors related to pathological aging, which is linked to high health costs, a high number of consultations and hospitalizations¹⁷ and a worse perception of quality of life, since dependence on medications is an inserted facet in the physical domain of WHOQOL-bref.

According to Garcia et al.,¹⁸ negative self-perceived health is associated with the physical, psychological and environment domains. Despite the fact that most of the studied elderly

people report some morbidity and use continuous medication, which can interfere in this self-perception of health, the scores in these domains presented means above those found in the literature,¹⁸⁻²⁰ which leads to the hypothesis that they are inserted in a socio-educational project that aims at empowering the elderly with health care in all its context.

The literature has shown that social welcoming and living with friends makes the elderly more resilient to the limitations imposed by aging, seeking to understand old age differently.^{20,21} Thus, the entire scope in which the elderly person is inserted seems to be responsible for this perception of quality of life. However, it is important to highlight that, when compared with elderly people with the same socioeconomic level, but with physical activity included in the program as a differential, the quality of life scores in this study are lower than found in the literature,²² showing that together (the empowerment of health care plus physical activity) they provide a further increase in the perception of quality of life.

With regard to the domain of social relationships, which reflects personal relationships, social support and sexual activity,¹² the elderly in the research showed mean values compatible with those of groups inserted in socio-educational projects that privilege dialog, emphasize health education, encourage change behavior, in addition to valuing group coexistence.^{11,21}

Another factor influencing the perception of quality of life is sleep. Investigating sleep satisfaction in this age group is important, as its dynamics is altered during the aging process by several factors, such as the following: changes in the circadian rhythm, polymedication, and physical and mental illnesses, as well as changes in the social environment.^{23,24} The changes in the sleep pattern of the elderly reflect on their health and can contribute negatively to quality of life.^{23,24}

The results showed the existence of correlations among the sleep facet and the facets of the environment and social relationship domains. The greater the satisfaction with sleep, the better the perception of the elderly in these domains. This relation shows the importance of the environment and social relationships domains for the elderly, which must be considered in the policies to promote the health of the elderly, as the environment in which they are inserted can influence or determine their level of dependence. The study showed that leisure and information opportunities, together with the inclusion of the elderly in social groups, has an association between better satisfaction with sleep and quality of life, showing the importance of socio-educational groups in the aging process.

It is worth mentioning that this investigation has limitations, as it is of a cross-sectional nature, with a convenience sample that does not allow inferences to the population. However, it shows relevance regarding the use and exploration

of instruments, such as the WHOQOL, guiding the research studies to better understand the complex aging process.

CONCLUSION

It was concluded that the facet of sleep that is part of the physical domain of the WHOQOL-bref instrument is also related to the aspects of the environment and social relationships, indicating that the environment in which the elderly individuals are inserted and their insertion in socio-educational groups contribute to better perception of satisfaction with sleep.

REFERENCES

1. Kuchemann BA. Envelhecimento populacional, cuidado e cidadania: velhos dilemas e novos desafios. *Soc Estado*. 2014[cited 2018 Aug 21];27(1):165-80. Available from: http://www.scielo.br/scielo.php?pid=S0102-69922012000100010&script=sci_arttext
2. Rocha-Brischiliari SC, Agnolo CMD, Gravena AAF, Lopes TCR, Carvalho MDB, Pelloso SM. Doenças crônicas não transmissíveis e associação com fatores de risco. *Rev Bras Cardiol*. 2014[cited 2018 Sept 16];27(1):35-42. Available from: http://www.rbconline.org.br/wpcontent/uploads/Art_52_RBC_27_1_Catia_Agnollo_Artigo_Original.pdf
3. Roepke SK, Ancoli-Isreal S. Sleep disorders in the elderly. *Indian J Med Res*. 2010[cited 2018 Dec 12];131:302-10. Available from: http://www.ijmr.org.in/temp/Indian/MedRes1312302-3781041_103010.pdf
4. Costa SV, Ceolim MF. Factors that affect inpatients' quality of sleep. *Rev Esc Enferm USP*. 2013[cited 2018 Dec 12];41(1):46-52. Available from: http://www.scielo.br/scielo.php?pid=S008062342013000100006&script=sci_arttext&tlng=en
5. Neves GSML, Giorelli AS, Florido P, Gomes MM. Transtornos do sono: visão geral. *Rev Bras Neurol*. 2013[cited 2018 Dec 12];49(2):57-71. Available from: <http://files.bvs.br/upload/S/0101-8469/2013/v49n2/a3749.pdf>
6. World Health Organization. Division of mental health and prevention of substance abuse. Programme on mental health. WHOQOL: measuring quality of life. Geneva: World Health Organization; 1997[cited 2018 Dec 12]. Available from: http://www.who.int/mental_health/media/68.pdf
7. Guimarães LHCT, Lima MD, Souza JA. Atividade física em grupo melhora o sono de idosas sedentárias. *Rev Neurocienc*. 2007[cited 2018 Dec 12];15(3):203-6. Available from: <http://www.revistaneurociencias.com.br/edicoes/2007/RN%2015%2003/Pages%20from%20RN%2015%2003-6.pdf>
8. Ferretti F, Beskow GCT, Slaviero RC, Ribeiro CG. Análise da qualidade de vida em idosos praticantes e não praticantes de exercício físico regular. *Estud Interdiscipl Envelhec*. 2015[cited 2018 Dec 12];20(3):729-43. Available from: <http://www.seer.ufrgs.br/index.php/RevEnvelhecer/article/view/41384/36683>
9. Fleck MPA, Louzada S, Xavier M, Chachamovich E, Vieira G, Santos L, et al. Aplicação da versão em português do instrumento abreviado de avaliação da qualidade de vida "WHOQOL-Bref". *Rev Saúde Pública*. 2000[cited 2018 Jan 12];34(2):178-83. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0034-8910200000200012
10. Dawailibi NW, Goulart RMM, Aquino RC, Witter C, Buriti MA, Prearo LC. Índice de desenvolvimento humano e qualidade de vida de idosos frequentadores de universidades abertas para a terceira idade. *Psicol Soc*. 2014[cited 2018 Jan 12];26(2):496-505. Available from: <http://dx.doi.org/10.1590/S010271822014000200025>
11. Castro PC, Tahara N, Rebelatto JR, Druisio P, Aveiro MC, Oishi J. Influência da Universidade Aberta da Terceira Idade (UATI) e do Programa de Revitalização (REVT) sobre a qualidade de vida de adultos de meia-idade e

- idosos. *Rev Bras Fisioter.* 2007[cited 2018 Jan 12];11(6):461-7. Available from: <http://dx.doi.org/10.1590/S1413-35552007000600007>
12. Modeneze DM, Maciel ES, Vilela Júnior GB, Sonati JG, Vilara R. Perfil epidemiológico e socioeconômico de idosos ativos: qualidade de vida associada com renda, escolaridade e morbidades. *Estud Interdiscipl Envelhec.* 2013[cited 2018 Jan 12];18(2):387-99. Available from: <http://www.seer.ufrgs.br/index.php/RevEnvelhecer/article/view/35868/27664>
 13. Tavares DMS, Arduini GO, Martins NPFM, Dias FA, Ferreira LA. Características socioeconômicas e qualidade de vida de idosos urbanos e rurais com doenças cardíacas. *Rev Gaúcha Enferm.* 2015[cited 2018 Jan 12];36(3):21-7. Available from: <http://dx.doi.org/10.1590/1983-1447.2015.03.45470>
 14. Hauser E, Martins VF, Teixeira AR, Gonçalves AK. Relação entre equilíbrio dinâmico e qualidade de vida de participantes de um programa de atividade física voltado ao público idoso. *Com Scientia Saúde.* 2015[cited 2018 Jan 12];14(2):270-6. Available from: <http://www.redalyc.org/articulo.oa?id=92941499011>
 15. Campos MO, Rodrigues Neto JF, Silveira MF, Neves DMR, Vilhena JM, Oliveira JF, *et al.* Impacto dos fatores de risco para doenças crônicas não transmissíveis na qualidade de vida. *Ciênc Saúde Colet.* 2013[cited 2018 Jan 12];18(3):873-82. Available from: <http://dx.doi.org/10.1590/S1413-81232013000300033>
 16. 7ª Diretriz Brasileira de Hipertensão Arterial. *Arq Bras Cardiol.* 2016[cited 2018 Jan 12];107(Supl.3):64-6. Available from: http://publicacoes.cardiol.br/2014/diretrizes/2016/05_HIPERTENSAO_ARTERIAL.pdf
 17. Alberte JSP, Ruscalleda RMI, Guariento ME. Qualidade de vida e variáveis associadas ao envelhecimento patológico. *Rev Soc Bras Clin Med.* 2015[cited 2018 Jan 12];13(1):32-9. Available from: http://www.scielo.br/pdf/reben/v70n2/pt_0034-7167-reben-70-02-0257.pdf
 18. Garcia CAMZ, Moretto MC, Guariento ME. Associação entre autopercepção de saúde, estado nutricional e qualidade de vida de idosos. *Rev Ciênc Méd.* 2018[cited 2018 Jan 12];27(1):11-22. Available from: <http://periodicos.puccampinas.edu.br/seer/index.php/cienciasmedicas/article/view/3959/2659>
 19. Vagetti GC, Moreira NB, Barbosa Filho VC, Oliveira V, Cancian CF, Mazzardo O, *et al.* Domínios da qualidade de vida associados à percepção de saúde: um estudo com idosos de um programa de atividade física em bairros de baixa renda de Curitiba, Paraná, Brasil. *Ciênc Saúde Colet.* 2013[cited 2018 Jan 12];18(12):3483-93. Available from: http://www.scielo.br/scielo.php?pid=S1413-81232013001200005&script=sci_abstract&tlng=pt
 20. Tavares DMS, Dias FA. Capacidade funcional, morbidades e qualidade de vida de idosos. *Texto Contexto Enferm.* 2012[cited 2018 Nov 18];21(1):112-20. Available from: <http://dx.doi.org/10.1590/S0104-07072012000100013>
 21. Leão MABC, Albino R, Nascimento EFA. Prática educativa investigativa na extensão universitária: uma proposta de legitimação dos saberes de adultos e idosos. *Rev Extensão Univ Taubaté.* 2012[cited 2018 Nov 18];1:132-45. Available from: http://www.unitau.br/files/arquivos/category_1/Revista_Extensao_2012_1416921903.pdf
 22. Sonati JG, Modeneze DM, Vilara R, Maciel ES, Boccaletto EMA, Silva CC. Body composition and quality of life (QoL) of the elderly offered by the "University Third Age" (UTA) in Brazil. *Arch Gerontol Geriatr.* 2010[cited 2018 Nov 18];52:e31–e35. Available from: doi:10.1016/j.archger.2010.04.010
 23. Haimov I, Shatil E. Cognitive training improves sleep quality and cognitive function among older adults with insomnia. *PLoS One.* 2013[cited 2018 Dec 15];8(4):e61390. Available from: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0061390>
 24. Monteiro NT, Neri AL, Ceolim MF. Insomnia symptoms, daytime naps and physical leisure activities in the elderly: FIBRA Study Campinas. *Rev Esc Enferm USP.* 2014[cited 2018 Dec 28];48(2):239-46. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0080-62342014000200242
-