

# *Analysis of Quality of Life of Seniors with Tinnitus' Symptoms*

## *Análise da Qualidade de Vida de Idosos com Sintoma de Zumbido*

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### **SUMMARY**

**Introduction:**

Tinnitus is a common complaint in the elderly.

**Objective:**

This study aims to evaluate the quality of life of seniors' people with symptoms of tinnitus by verifying the variation of sex and age's influence.

**Method:**

A prospective study. Thirty-six seniors' people have compounded the sample. Initially, an interview was conducted in order to obtain individuals socio demographics data. The tool WHOQOL-OLD was used; it was prepared by the World Health Organization (WHO) to assess the quality of life of seniors. The average age of our sample was  $68.67 \pm 6.84$  years. Regarding gender were 26 (72.2%) elderly women and 10 (27.78%) were male.

**Results:**

Most of them have classified their tinnitus as weak (44.4%) or moderate (36.1%) and reported feeling worsening of tinnitus at night (47.2%). The results demonstrate that tinnitus is not affecting the quality of life in this sample. The excellent scores of the WHOQOL-old show values next to the maximum punctuation. When the scores were analyzed by sex, it was verified that except for the facet death/dying, this variable did not influence the quality of life of valued seniors.

**Conclusion:**

The results of this study have pointed that quality of life of valued seniors is maintained despite the presence of tinnitus, contradicting the findings of the literature. There was no relationship between quality of life and gender' variables and loudness sensation of tinnitus.

**Keywords:**

seniors, tinnitus, quality of life.

### **RESUMO**

**Introdução:**

O zumbido é uma queixa comum em idosos.

**Objetivo:**

O presente estudo tem como objetivo avaliar a qualidade de vida de indivíduos idosos com sintoma de zumbido, verificando-se também a influência das variáveis sexo e idade.

**Método:**

Estudo prospectivo. A amostra foi composta por 36 indivíduos idosos. Inicialmente foi realizada uma entrevista, visando obter dados sociodemográficos dos indivíduos. Foi utilizado o instrumento WHOQOL-OLD, elaborado pela Organização Mundial da Saúde (OMS), para a avaliação da qualidade de vida de idosos. A média de idade da amostra deste estudo foi  $68,67 \pm 6,84$  anos. Em relação ao sexo, foram 26 (72,2%) idosos do sexo feminino e 10 (27,78%) do sexo masculino.

**Resultados:**

A maior parte classificou seu zumbido como fraco (44,4%) ou médio (36,1%) e referiu sentir piora do sintoma de zumbido à noite (47,2%). Os resultados obtidos demonstram que o zumbido não está afetando a qualidade de vida desta amostra. Os excelentes escores obtidos no WHOQOL-old demonstram valores próximos à pontuação máxima. Quando foram analisados os escores por sexo, verificou-se que, com exceção da faceta morte/morrer, esta variável não influenciou a qualidade de vida dos idosos avaliados.

**Conclusão:**

Os resultados obtidos neste estudo evidenciaram que a qualidade de vida dos idosos avaliados está mantida, apesar da presença do zumbido, contrariando os achados da literatura especializada. Também não houve relação entre a qualidade de vida e as variáveis sexo e sensação de intensidade do zumbido.

**Palavras-chave:**

idoso, zumbido, qualidade de vida.

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## INTRODUCTION

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The population aging is a fact, which is found both in developed and in developing countries. Aging is considered as one period of the continuum that is the life, beginning with conception and finishing with the death. It is a dynamic, progressive process, in which, there is morphologic modifications, functional, biochemists, and psychological that can instigate the adaptation capacity reduction of the individual to the environment bringing on a major vulnerability and incidence of pathologic processes that end up to lead him to death (1).

Due the age advance, several physiological variations start to be noticed by individuals. Often these changes have its opening in previous periods of the life; however, the manifestation occurs from the entrance in the called better age.

The health problems can affect in a significant way the senior's quality of life that begins to suffer functional restrictions in the daily life of them.

Among these problems, it is the Tinnitus. It can occur in any period of the life, but the major prevalence happens to seniors probably due to the auditory and vestibular system's deterioration (2, 3). Studies evidenced that Tinnitus is the second otorhinolaryngological complaint more prevalent in seniors (4), even though, several times the Tinnitus description is more frequent than the one of the hearing loss (5).

Tinnitus is definite as a sensation of a sound without an external stimulus. It can be noticed in one or in the two ears and it can also be described as noticed in the head (6, 7). There are several classifications for the Tinnitus. The most common is the one that separates the Tinnitus in subjective (noticed only by patient) or objective (noticed by other people) (8).

Tinnitus can be described in several ways by characters, do not having relation between the intensity and the discomfort caused by it (9). As the prevalence, it is believed that between 10% and 33% of the seniors presented this symptom. Whenever seniors with hearing loss are evaluated, the prevalence can reach to 80% (2, 3).

Tinnitus probably is the first symptom of a sequence of pathologies that affect an individual health and well-being (8).

The relation between Tinnitus and the quality of life is cited in the specialized literature (10, 11, 12, and 13). In many cases, Tinnitus can incite social insulation, sleep

disturbance, concentration, and emotional instability, and generate impotency in the individuals, in other words, it affects significantly the quality of life (14, 15, 16 and 17).

There are several components of the quality of life. Because it is a subjective conception, its definition and evaluation are extremely complexes. Due it, World Health Organization (WHO) researchers have gotten together and have elaborate one of the concepts more utilized today. For this organism, quality of life is the "individual perception of its position in life in the context of the culture and value system in which it lives and in relation to its objectives, hopes, patterns, and preoccupation." From this conception, it was created an evaluation tool called *World Health Organization Quality of Life* (WHOQOL) (18). As it is extremely larger (100 questions), after the researchers have developed an abbreviated version (WHOQOL-bref) (19), which has derived other versions to be applied on specific individual groups. For the senior population, it was created the questionnaire WHOQOL-OLD, already translated and authenticates in the Brazil by a researcher's group of the Hospital das Clínicas at Porto Alegre-RS (20).

The WHOQOL-old is compounded by 24 questions that evaluate six facets: Sensory Functioning (SF); Autonomy (AUT); Past, Present and Futures Activities (PPF); Social Participation (SOP); Death and Dying (D&D); Intimacy (INT). Each one of the facets has four items. For all facets, the possible values score can, therefore float of 2 to 20 since all items of that facet have been filled. The six facets scores or the 24 items values of the module WHOQOL-old can be combined to produce a general score (global) for the quality of life in seniors denotes as the total score of the module WHOQOL-old (20).

The "Sensory Functioning" module evaluates the sensorial functioning and the impact of the sensitive ability loss in the quality of life. In the "autonomy," the individual independence is evaluated. The facet "past, present, and futures activities" analyzes the satisfaction about conquest in the life and things by which it is yearned. In "social participation" is evaluated the participation in daily activities. In the module, "death and dying," preoccupations, discomfort and fear concerning the theme are analyzed.

Starting from the theorists described presuppositions; the present study aims evaluate the quality of life of individual seniors that present the Tinnitus symptom, by verifying also the variation of sex and age's influence.

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## METHOD

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The delimitation of this study is observational, descriptive, of a group, prospective, contemporary, and

transversal (21). This investigation sample was compounded by 36 seniors (age equal or above 60 years old), that suffers of Tinnitus, selected by a non-probabilistic sampling method, of convenience.

Seniors that have composed the sample were invited to participate of the study in the Clinic of Speech Therapy at Lutheran University of The Brazil, in the Better age University and in the hydro gymnastic project for seniors of the same institution.

At the beginning, an interview was proceeded by aiming obtains socio demographics data of the individuals and the Tinnitus presence.

For the application of the WHOQOL-old, was turned over to each interview participant, individually the auto applicable questionnaire except for the seniors with reading difficulties by which the questionnaires were read by the researcher.

The descriptive analysis of the age and of the WHOQOL-old score was executed via observation of the average calculation and pattern deviation.

The statistic analysis was executed in the software *Statistical Package for Social Science* (SPSS) 10.0 for Windows. The Student-t Test was utilized for independent samples to compare each domain of the Whoqol and the general amount of the Whoqol between men and women of the sample. This t-test was also utilized to compare the difference on the Tinnitus intensity between men and women. The ANOVA was adopted of one factor to compare the results of each domain of the whoqol and of the general amount of the Whoqol between characters that present weak, moderate, and strong Tinnitus, and to verifying if there was a difference in relation to the characters age that present weak, moderate, and strong Tinnitus. The significance level was considered of 0,05.

The project was approved in the Ethics in Research Committee of the Lutheran University of Brazil, protocol 2007-261H.

## RESULTS

According to the analysis of the socio demographic data of the study, from 36 seniors that have compounded the sample, 26 (72,2%) were the female sex and 10 (27,8%) are the male sex, and the age average was 68,67 ± 6,84 years.

Regarding the Tinnitus intensity sensation, 16 seniors (44,4%) described your Tinnitus as weak, 13 (36,1%) as

**Table 1. Instant of the Day in which they feel the Tinnitus more intense.**

Variable	General
Instant in which the Tinnitus increases	
Day	3 (8,3%)
Night	17 (47,2%)
Do not realize difference	8 (22,2%)
Morning	2 (5,6%)
Do not know	4 (11,1%)
Others	2 (5,6%)
Total	36 (100%)

**Table 2. WHOQOL-old score data.**

Facets	WHOQOL-old score
Sensory functioning	14,16 ± 3,66
Autonomy	13,67 ± 2,94
Past, present and futures activities	15,61 ± 2,37
Social Participation	15,44 ± 2,74
Death/Dying	14,97 ± 3,87
Intimacy	15,58 ± 2,58
Total score	93,78 ± 9,37

moderate, and 7 (19,4%) as strong. The period in which they felt the tinnitus in a more accentuated mode was at night, according to the data presented in the Table 1.

In the Table 2, the WHOQOL-old score data are presented, obtained with the sample characters.

Considering that it not had an incision point to determinate if the individuals' quality of life is or not appropriate and that the maximum score to be obtained in each one of the facets is 20, it was found that all the evaluates aspects, obtained values were similar, over half of the maximum possible punctuation. The total score was also rather high.

In the Table 3, the WHOQOL-old facet's data are placed stratified by sex and the Student t-test results (p). The statistic has pointed that there was a significant difference (p=0,016) between men and women for the domain "death/dying" of the WHOQOL. Other domains and the general amount of the Whoqol do not presented significant difference among the sexes.

In the Table 4, the stratified data are presented for the Tinnitus intensity sensation, as related by sample characters.

**Table 3. WHOQOL-old results stratified by sex.**

	Men	Women	p
Sensory functioning	14,1 ± 3,75	23,07 ± 3,69	0,887
Autonomy	15,8 ± 2,44	15,0 ± 3,12	0,411
Past, present and futures activities	15,2 ± 2,25	15,76 ± 2,42	0,510
Social Participation	14,6 ± 2,63	15,76 ± 2,76	0,232
Death/Dying	17,6 ± 2,72	13,96 ± 3,81	0,016*
Intimacy	16,5 ± 1,90	15,26 ± 2,75	0,192
Total score	93,8 ± 8,21	90,23 ± 9,75	0,308

\* It indicates  $p < 0,05$

**Table 4. Stratified data for the Tinnitus intensity sensation related by sample characters.**

Variable	Weak n=16	Moderate n=13	Strong n=7	p
Age (years)	70,31 ± 8,21	67,54 ± 4,20	67,00 ± 4,20	0,96
Sex				
Female	11 (68,8%)	9 (69,2%)	6 (85,7%)	
Male	5 (31,2%)	4 (30,8%)	1 (14,3%)	0,35
WHOQOL-old - Sensory Functioning	14,5 ± 3,58	13,77 ± 3,73	14,14 ± 4,22	0,873
WHOQOL-old - Autonomy	14,93 ± 2,93	15,23 ± 1,78	13,57 ± 4,20	0,568
WHOQOL-old - Past, present, and futures activities	15,94 ± 2,74	15,69 ± 1,60	14,71 ± 2,69	0,526
WHOQOL-old - Social Participation	14,71 ± 3,42	15,92 ± 1,66	14,26 ± 2,63	0,445
WHOQOL-old - Death/Dying	14,19 ± 4,05	15,46 ± 3,82	15,86 ± 3,76	0,554
WHOQOL-old - Intimacy	16,0 ± 2,90	15,85 ± 2,27	14,14 ± 2,12	0,261
WHOQOL-old - Global	91,63 ± 9,93	92,23 ± 6,38	87,29 ± 12,96	0,514

The data analysis evidenced that were not founded statistically significant differences between the sample components age and sex, in which concern to the Tinnitus sensation ( $p=0,96$  and  $p=0,35$ ). By verifying the results obtained to each one of the facets of the WHOQOL-old and the Tinnitus intensity, it was founded similar values, in other words, do not have a significant difference in the facets and in the general amount of the Whoqol between individuals that presented weak, moderate, and strong Tinnitus, as can be observed in the Table 4.

## DISCUSSION

The socio demographic data of the study evidenced that the major part of the seniors evaluated was the female sex. It was already expected, once the studies concerning

aging point to feminizing of the aging, in other words, more women reach the age of 60 years old and they remain during a more time in the senior's group than the men (22, 23).

In relation to Tinnitus intensity sensation, the major part has classified it as weak or moderate, confirming the literature data (15). According to the expected, the major part of the sample components drafted that at night they feel worsen of the Tinnitus symptoms. It occurs because, normally, the ambiences were extremely noisiest during the day. The evaluated seniors were quite rustlers what probably induced them not to be careful to the Tinnitus. During the night, due the diminution of the ambient noisy and of the activities, the Tinnitus ends up being noticed with major clarity, what to the interviewee seniors, origins the sensation of an increase of its intensity.

Regarding the quality of life, the obtained results demonstrate that the Tinnitus do not affects it. The excellent scores obtained in the WHOQOL-old demonstrate values next to maximum punctuation. Whenever the scores were analyzed by sex, it was verified that, in exception of the facet death/dying, this variable does not influenced the evaluate senior's quality of life.

Concerning the Tinnitus intensity sensation by seniors, it was found that it not had a relation between this variable, the age, and the sex or the global scores and by facet in the WHOQOL-old.

The obtained results in this study demonstrated, wherefore that in the investigated group, the quality of life is maintained contradicting the expected by researchers and the findings of the specialized literature (10, 11, 12, 13, 14, 15, 16, and 17).

It is believed that the Tinnitus interfere in the quality of life, but the tolerability not only depends on the specific characteristics of the Tinnitus (frequency sensation, intensity frequency, Tinnitus type among other things), but also of the affective condition, emotional and of the mental function of the individual that presents it (3,6, and 24). Several seniors that have compounded the sample of this study practice hydro gymnastic. It is believed that such fact has been determinant for the obtained results, once the practice of physical activities diminishes the anxiety, raise the self-esteem, and provide well-being that is one of components of the quality of life (25). Other parts of the group components attended the Better Age University, in which are conducted physical activities, speeches, singing lessons and dance. This sure improves the senior's quality of life, making that they maintained their physical and mental health and, preventing that the Tinnitus had a negative repercussion in their daily life. According to the model of quality of life in the senior, it is a multi dimensional conception that involves socio normative and interpersonal criteria of senior relation with it ambience. It encloses four dimensions: behavioral competence, environmental conditions, quality of life noticed, and subjective well-being (26).

Therefore, it can hypothesize that, in function of the life quite active of the sample characters, the Tinnitus do not come to be a factor that interposes negatively in their quality of life, in other words, do not compose a negative factor with strength to cause impact and damage significantly the quality of their lives.

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## CONCLUSION

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The obtained results in this study have evidenced

that, despite the presence of the Tinnitus, the senior's quality of life evaluated is maintained, contradicting the findings of the specialized literature. In them, also it is not verified relation between the quality of life and the sex and Tinnitus intensity sensation variables.

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## BIBLIOGRAPHICAL REFERENCES

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1. Netto MP. O Estudo da Velhice no Século XX: Histórico, Definição do Campo e Termos Básicos. In: Freitas EV, Py L, Néri AL, Cançado FAX, Gorzoni ML, Rocha SM. Tratado de Geriatria e Gerontologia. Rio de Janeiro: Guanabara, 2002.
2. Ahmad N, Seidman M. Tinnitus in the Older Adult - Epidemiology, Pathophysiology and Treatment Options. *Drugs and Aging*. 2004, 21(5): 297-305.
3. Almeida LD, Mitre EI, Lemos L, Simões ECC. Vestibulometria em indivíduos com zumbido e exames audiológicos normais. *CEFAC*. 2005, 7(3): 382-87.
4. Lunedo SMC, Sass SMG, Gomes AB, Kanashiro K, Bortolon L. Prevalência dos principais sintomas otorrinolaringológicos em uma população geriátrica ambulatorial. *Arq Int Otorrinolaringol*. 2008, 12(1):95-8.
5. Chang H, Chou P. Presbycusis among older Chinese people in Taipei: Taywan: a community-based study. *Int J Audiol*, 2007, 46(12): 738-45.
6. Welch D, Dawes PJD. Personality and Perception of Tinnitus. *Ear & Hear*. 2008, 29(5): 684-92.
7. Aazh H, Moore BCJ, Roberts P. Patient-centered tinnitus management tool: a clinic audit. *Am J Audiol*. 2009, 18: 7-13.
8. Menezes PL, Santos Filha VAV. Acufenometria: o resgate de um instrumento de avaliação do zumbido e sua correlação com perdas auditivas sensoriais. *Fonoaudiologia Brasil*. 2005, 3(1): 1-4.
9. Dias A, Cordeiro R, Corrente JE. Incômodo Causado pelo Zumbido Medido pelo Questionário de Gravidade de Zumbido. *Rev Saúde Pública*. 2006, 40(4):706-11.
10. Reynolds P, Gardner L, Lee R. Tinnitus and psychological morbidity: a cross-sectional study to investigate psychological morbidity in tinnitus patients and its relationship with severity of symptoms and illness perceptions. *Clin Otolaryngol*. 2004, 29(6): 628-34.
11. Baraldi GS, Almeida LC, Borges ACLC. Perda auditiva e hipertensão: achados em um grupo de idosos. *Rev Bras Otorrinolaringol*. 2004, 70(5):640-44.

12. Sanchez TG, Medeiros IRT, Levy CPD, Ramalho JRO, Bento RF. Zumbido em pacientes com audiometria normal: características clínicas e repercussões. *Rev Bras Otorrinolaringol.* 2005, 71(4):427-31.
13. Ferreira LMBM, Ramos Junior, NA, Mendes, EP. Caracterização do zumbido em idosos e de possíveis transtornos relacionados. *Rev Bras Otorrinolaringol.* 2009, 75(2):249-55.
14. Sanchez TG, Pedalini MEB, Bento RF. Aplicação da terapia de retreinamento do zumbido (TRT) em hospital público. *Arq Int Otorrinolaringol.* 2002, 6(1):29-38.
15. Coelho CCB, Sanchez TG, Bento RF. Características do zumbido em pacientes atendidos em centro de referência. *Arq Int Otorrinolaringol.* 2004, 8(3):216-24.
16. Ferrari GMS, Sanchez TG, Pedalini MEB. A eficácia do molde aberto para o controle do zumbido. *Rev Bras Otorrinolaringol.* 2007, 73(3):370-77.
17. Tyler RS, Haskell GB, Gogel S, Gehringer AK. Establishing a tinnitus clinic in your practice. *Am J Audiol.* 2008, 17:25-37.
18. Fleck MPA, Leal OF, Louzada S, Xavier M, Chachamovich E, Vieira G et al. Desenvolvimento da versão em português do instrumento de avaliação de qualidade de vida da Organização Mundial da Saúde (WHOQOL-100). *Rev Bras Psiquiatr.* 1999, 21(1):19-28.
19. 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, 34(2):178-83.
20. Fleck MPA, Chachamovich E, Trentini C. Projeto WHOQOL-OLD: método e resultados de grupos focais no Brasil. *Rev Saúde Pública.* 2003, 37(6):793-99.
21. Goldin JR. Manual de Iniciação à Pesquisa em Saúde. Porto Alegre: Da Casa, 2000.
22. Palma LTS. Educação permanente e qualidade de vida: indicativos para uma velhice bem-sucedida. Passo Fundo: UPF Editora, 2000.
23. Néri AL. Palavras-chave em Gerontologia. São Paulo: Alínea, 2001.
24. Sobik C, Weber RK, Münte TF, Walter M, Frommer J. Evidence of psychosomatic influences in compensated and descompensated tinnitus. *Int J Audiol.* 2005, 44:370-78.
25. Mota J, Ribeiro, JL, Carvalho J, Matos MG. Atividade física e qualidade de vida associada à saúde em idosos participantes e não participantes em programas regulares de atividade física. *Rev Bras Educ Fís Esp.* 2006, 20(3):219-25.
26. Lawton MP. Environment and other determinants of well-being in older people. *The Gerontologist.* 1983, 23:349-57.