

Vasco de Oliveira<sup>1),2),3)</sup>  
Rute Meneses<sup>3)</sup>

<sup>1)</sup> Ent Department Of Hospital  
Das Forças Armadas – Pólo Do  
Porto, Portugal

<sup>2)</sup> Audiology Department Of  
Superior Health School –  
Politécnico Do Porto, Portugal

<sup>3)</sup> Human And Social Sciencies  
University – Universidade  
Fernando Pessoa, Portugal  
vasco.oliveira@eu.ipp.pt  
rmeneses@udu.ufp.pt

## CLINICAL ASPECTS OF QUALITY OF LIFE IN TINNITUS PATIENTS

**Abstract:** The knowledge of the clinical aspects that could be related with Quality of Live (QoL) of tinnitus patients should be important when the care procedures where organized.

**Method:** It was used a Sociodemographic and Clinical questionnaire, and the Portuguese version of SF-36v2 in 74 tinnitus patients: 34 men; M=55,63 years (PD=13,65; 18-79) and M=8,42 years of schooling (PD=4,54; 4-18). As it was confirmed that is a normal distribution, t test was applied.

**Results:** The time with the complaint, where is perceived and the type of tinnitus where not related with the dimensions of SF-36v2. The QoL was related with hyperacusis (Vitality - VT and Mental Heath – MH), dizziness (Physical function – PF; Role functioning/physical – RF; General Health; VT; and Role functioning/emotional – RE;), existence of “nervous problems” (VT; Social functioning; RE; MH) and hearing level (RF), with values of  $p < 0,033$ .

**Conclusion:** In our sample, we realized that the presence of hyperacusis, dizziness and worse hearing level and the presence of nervous problems, where related with a compromised QoL. These results, combined in a clinical profile related to worse QoL, in tinnitus patients, can be an important contribution for programing more efficient intervention programs in this patients.

**Keywords:** Quality of Life; SF36v2; ;tinnitus;

## 1. INTRODUCTION

Araújo and Escada [1] define tinnitus, stating that depending on the patient, it can be defined as the aberrant perception of sound, without the existence of external acoustic stimuli." The lack of knowledge of the mechanisms that cause tinnitus therapeutic approach associated with the difference of valorization that the patients themselves present to equal complaints from the psychoacoustic point of view.

According to Dauman [2], 7% of adults seek medical help for complaints of tinnitus, increasing the prevalence with age, reaching 15.8% in the age group between 61 and 70 years. However, the symptom only becomes problematic in a small number of subjects [3].

In addition, it is possible to compare groups of patients with different quality of life, such as different health conditions or other clinical and demographic factors [4]. In a study conducted in the United Kingdom using the SF-

36v1, Davis and Roberts [5] found that the scores of individuals with tinnitus were decreased in all subscales when compared to subjects without tinnitus. Wilson, Lewis and Stephens [6] found values similar to those of the aforementioned authors, finding that the worst results were in the subscales of Social Functioning, Physical Pain, Physical Performance and Emotional Performance.

Given these data, we intend to go a little further and identify clinical correlates of QOL of individuals with tinnitus, to support care delivery.

## 2. METHODS

The study included the administration of a Socio-demographic and Clinical Questionnaire (elaborated for this purpose) and the Portuguese version of the SF-36v2, thus assessing a convenience sample of 74 individuals with tinnitus followed in various ENT consultation hospitals: 37 men; with mean age of 55.6 years

(SD = 13.7, 18-79); and average schooling of 7.1 years (SD = 4.5, 1-20). The mean duration of tinnitus was 8.7 years (SD = 9.5, 1-46), which reinforces the chronic component of tinnitus.

The Socio-demographic and Clinical Questionnaire included questions about the sex, age, marital status, profession and respective professional situation, and schooling. It also had questions related to the presence of tinnitus, which went through its duration, type, location, discomfort caused by noisy environments and complaints of imbalance or vertigo, with the results presented in table 1.

**Table 1 - Clinical characterization of the sample**

Clinical Variables	People with tinnitus (n=74) n (%)
<b>Type of tinnitus</b>	
Permanent	51 (68,9%)
Intermittent	23 (31,1%)
<b>Tinnitus location</b>	
Right ear	9 (12,2%)
Left ear	17 (23,0%)
Both ears	26 (35,1%)
Head	11 (14,9%)
Head and ears	11 (14,9%)
<b>Hyperacusis:</b>	
Disturbing	58 (78,4%)
Not disturbing	16 (21,6%)
<b>Balance Problems:</b>	
Yes	41 (55,4%)
No	33 (44,6%)

There were also questions regarding psychological and emotional aspects, with the values that are visible in table 2.

The mean hearing level was 30.87 dB (4.1-72.6) with SD = 14.67. Version 2 of SF-36, translated and adapted for the Portuguese population ([4]; [7]; [8]) was used as an indicator of QOL. This is a concise questionnaire with psychometric robustness, consisting of 36 questions and Likert type response options, grouped into eight subscales, corresponding to 8 scores (Physical Function, Physical Performance, Physical Pain, General

Health, Vitality, Mental Health, Emotional Performance and Social Function), in addition to the item / indicator of Health Change (item 2); it is possible to obtain two global scores: Physical and Mental Component of the subject's QOL, in a total of 11 QOL indicators ([7] ; [4]; [9] ; [10]).

**Table 2 - Description of the sample for questions regarding the possible existence of nervous or emotional problems**

Clinical Variables	People with tinnitus (n=74) n (%)
<b>Nervous problems (n=73):</b>	
Yes	46 (63%)
No	27 (37%)
<b>Their relationship with tinnitus (n=46):</b>	
Yes	17 (37,2%)
No	29 (62,8%)
<b>The nervous problema remains (n=22):</b>	
Yes	19 (86,4%)
No	3 (13,6%)
<b>Consultation or medication for the problem (n=22)</b>	
Yes	19 (86,4%)
No	3 (13,6%)
<b>Remains the therapy (n=20):</b>	
Yes	13 (65%)
No	7 (35%)

The SF-36v2 was quoted according to the procedures contained in the manual of this instrument, corresponding to a higher value in each indicator, a better QOL [11].

The questionnaires were filled by self-administration with some, few, exceptions that related to aspects such as the subject not having taken his reading glasses, having difficulty perceiving some of the issues, or having difficulty reading.

### 3. RESULTS

The results obtained with the application of SF-36v2 are shown in Table 3. The highest values found correspond to the Physical Function, Emotional Performance and Physical Performance, which are dimensions related to physical activities and work performance. The

lowest values refer to General Health, Vitality, as well as to Mental Health and Physical Pain, which translates into a decreased perception of their health, lower energy, as well as impact of psychological aspects and the presence of pain. The lowest values refer to General Health, Vitality, as well as to Mental Health and Physical Pain, which translates into a decreased perception of their health, lower energy, as well as impact of psychological aspects and the presence of pain.

**Table 3 - Results obtained in the subscales of SF-36v2 (N = 74)**

SF-36v2	M	SP	Amplitud
Dimension			
Physical Function	67,43	24,60	10-100
Physical Performance	61,49	31,80	0-100
Physical Pain	51,82	26,64	0-100
General Health	42,72	19,29	10-100
Vitality	45,21	23,79	6-94
Social Function	58,73	28,16	0-100
Emocional Performance	63,47	31,51	0-100
Mental Health	51,60	23,91	5-100

However, when comparing these results with the results presented by Ferreira and Santana [4] - Portuguese standards -, it is verified that the sample of the present study presented values lower than those of the general population in all dimensions, presenting high standard deviations, which are like those obtained by these authors.

The use of the t-test allowed to verify that the time of installation of the tinnitus, their type, and its location were not related to the dimensions of the SF-36v2, and the regrouping of the location variable was carried out assuming that the location in the head would be unilateral, being grouped with the location in one ear, the second group corresponding to the bilateral location, where the perceived tinnitus in the head and ears are counted simultaneously.

The QOL was related to hypersensitivity to sound (hyperacusis) (Vitality ( $t(71) = -2,824$ ,  $p = 0.006$ ,  $M_{with\ hyperacusis} = 41,23$ ,  $M_{without\ hyperacusis} = 59,38$ ) and Mental Health ( $t(70) = -2,183$ ,  $p = 0.032$ ,  $M_{with\ hyperacusis} = 48,39$ ,  $M_{without\ hyperacusis} = 62,81$ ), with individuals with higher sensitivity to sound having lower values of QOL, being in agreement with [12] that suggest this aspect as being one of the predictors of QOL in individuals with tinnitus.

The balance problems are also related to the QOL of these individuals (Physical Function ( $t(72) = -2,562$ ,  $p = 0,013$ , with  $=61,10$ ,  $M_{without} = 75,30$ ), Physical performance ( $t(72) = -3,822$ ,  $p = 0,000$ ,  $M_{with} = 49,85$ ,  $M_{without} = 75,95$ ); General Health ( $t(72) = -2,439$ ,  $p = 0,017$ ,  $M_{with} = 37,98$ ,  $M_{without} = 48,61$ ), Vitality ( $t(71) = -2,448$ ,  $p = 0,017$ ,  $M_{with} = 39,22$ ,  $M_{without} = 52,46$ ); e Emocional performance ( $t(71) = -2,828$ ,  $p = 0,006$ ,  $M_{with} = 54,67$ ,  $M_{without} = 74,74$ ), confirming the association between tinnitus and imbalance reported by Shulman [13], for which the presence together these two symptoms contribute to worsening QOL.

The existence of "nervous problems" leads to the relationship with the QOL of these individuals who present lower values for (Vitality ( $t(70) = -2,529$ ,  $p = 0,014$ ,  $M_{C_{with}} = 39,67$ ,  $M_{without} = 53,85$ ); Social Function ( $t(70) = -3,036$ ,  $p = 0,003$ ,  $M_{with} = 50,83$ ,  $M_{without} = 70,37$ ), Emocional Performance ( $t(70) = -2,919$ ,  $p = 0,005$ ,  $M_{with} = 55,00$ ,  $M_{without} = 76,23$ ); Mental Health ( $t(69) = -4,335$ ,  $p = 0,000$ ,  $M_{with} = 42,78$ ,  $M_{without} = 65,19$ ) knowing that anxiety and depression, as well as other emotional aspects are factors that contribute to a lower QOL [12].

Regarding the questions about the possible existence of nervous or emotional problems (Table 2), it is verified that of the 46 individuals who report presenting "nervous problems", only 17 (37%) relate them to the presence of tinnitus, which seems to be possible to assume that they are not the main cause of these "problems". In view of the small number of elements, no statistical treatment was made for the remaining questions.

The level of hearing also has a correlation with the QOL (Physical Function ( $r(74) = -0.401$ ,  $p = ,000$ ), and the worse the hearing level the worse the individual's QOL.

#### 4. CONCLUSION

In the studied sample, the presence of hypersensitivity to sound, imbalances and worse hearing, besides "nervous disorders", were associated with reports of worse QOL.

The confirmation of these results translated into a clinical profile associated with worse QOL, in individuals with complaints of tinnitus, can be an important contribution in the programming of the multidisciplinary intervention in these patients.

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