ORIGINAL ARTICLE

# Tinnitus And The Prevalence of Co-Morbid Psychological Stress

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## ABSTRACT

***Background**: Tinnitus is a symptom of unknown pathophysiology with few therapeutic measures and may present with co-morbid psychological stresses necessitating psychiatric treatment. This study aims at determining the prevalence of depression and anxiety in tinnitus sufferers in our environment.*

***Method**: This is a one year (April 2006 March 2007) prospective study of out-patients presenting with tinnitus to our Ear, Nose and Throat clinic who were administered the Hospital Anxiety and Depression Scale (HADS) questionnaire until the sample size was reached.*

***Results**: Questionnaires were administered to one hundred and four patients with tinnitus, 92 patients filled theirs correctly and these were analyzed. There were 42(45.7%) males and 50(54.3%) females (Table 1) with an age range of 20 to 78years.*

*Six hundred and eighty seven patients presented with various otologic ailments in the study period, of which 104 (15.1%) patients had tinnitus.*

*The overall prevalence of depression was 17.4%, higher in females (9.8%) than males (7.6%).The overall prevalence of anxiety was 22.8% with males having a higher prevalence (11.9%) than females (10.9%). Three (3.2) patients had both depression and anxiety. Eighty three (90.2%) patients were in the active and productive age group with 13 patients (prevalence of 14.1%) having depression and 20 patients (prevalence of 21.7%) with anxiety.*

***Conclusion**: We recommend the screening or assessment for psychological distress in tinnitus sufferers so that patients can be adequately treated.*

***Key Words**: Tinnitus, Depression, Anxiety, Prevalence*

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## INTRODUCTION

Tinnitus is an auditory perception unrelated to an external acoustic source [1] and its either objective (audible to the affected and any other individual) or subjective (audible only to the affected) [2], occurring as a symptom of an auditory pathology.[3] It is a symptom of increasing health concern affecting all strata of the public [4]. A phenomenon of unknown pathophysiology with few therapeutic measures [5], it may manifest with the co-morbid psychological stresses, anxiety and depression amongst others necessitating psychiatric treatment in addition.[6,7]

It impinges on the lives of individuals to varying degrees occurring as a minor irritation to some and in extreme cases resulting in suicide.[8] Twenty percent of tinnitus sufferers endure their symptoms to an extent that it impairs their quality of life and participation in everyday life and about 60% have depression [9].

However, no standardized mechanism exists to measure these clinically important parameters. [10]

Various measures are in use to assess tinnitus related distress. The Hospital Anxiety and Depression Scale (HADS) used in this study, was designed by Zigmond and Snaith in 1983 to detect anxiety and depression in general medical outpatient and community populations.[11] It has also been validated for use in Nigeria as a screening instrument for anxiety and depression in hospital and community settings.[12] The HADS is a self-administered questionnaire that can be completed in a short space of time. It consists of seven depression items and seven anxiety items selected to distinguish the effects of physical illness from mood disorders. The face validity, content validity, concurrent validity and internal consistency of this scale were found to be good.[11]

The reported prevalence of psychological stress in patients suffering from tinnitus is from epidemiological studies conducted in other countries of the world. [9, 13, 14] We are unaware of reports of such studies in our environment. In this prospective study, we analyze the prevalence of depression and anxiety amongst tinnitus sufferers in our environment.

## PATIENTS AND METHODS

All patients who presented to the Ear, Nose and Throat Clinic of the Jos University Teaching Hospital with tinnitus of various aetiologies within the period April 2006 to March 2007 were administered the Hospital Anxiety and Depression Scale (HADS) questionnaire

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after obtaining informed consent from each patient. Scores of between 8 and 10 on the HADS is borderline, less than 8 is normal and above 10 indicate presence of anxiety or depression respectively. The data collected from the completed questionnaires was entered into a computer and analyzed using the EPI-INFO database and statistics software for public health professionals, version 3.3.2. All questionnaires improperly filled were excluded from the study. The results are presented in simple descriptive forms and tables.

## RESULTS

Questionnaires were administered to one hundred and four patients with tinnitus, 92 patients filled theirs correctly and these were analyzed. There were 42(45.7%) males and 50(54.3%) females (Table I) with an age range of 20 to 78years. Majority of the patients were in the age range 30-39 (42.4%) years. The mean ages were 36.4(SD=31.6) and 35.7(SD=28.2) years for males and females respectively. Six hundred and eighty seven patients presented with various otologic ailments in the study period, of which 104 (15.1%) patients had tinnitus.

The overall prevalence of depression was 17.4%. This was higher in females (9.8%) than males (7.6%). Three (3.3%) patients- 2(2.2%) females and 1(1.1%) male had both depression and anxiety.

**Table I: Age and Sex distribution of patients with tinnitus**

| Age group (years) | Male | Female | Total |
|---|---|---|---|
| 20-29 | 11 | 16 | 27 (29.3) |
| 30-39 | 18 | 21 | 39 (42.4) |
| 40-49 | 9 | 8 | 17 (18.5) |
| 50-59 | 2 | 2 | 4 (4.3) |
| 60-69 | 2 | 2 | 4 (4.3) |
| 70-79 | 0 | 1 | 1 (1.1) |
| **Total** | **42** | **50** | **92 (100)** |

**Table II: Overall prevalence of depression and anxiety**

| Age group (years) | No. of Patients | Depression | % | Anxiety | % |
|---|---|---|---|---|---|
| 20-29 | 27 | 7 | 25.9 | 7 | 25.9 |
| 30-39 | 39 | 3 | 7.7 | 8 | 20.5 |
| 40-49 | 17 | 3 | 17.6 | 5 | 29.4 |
| 50-59 | 4 | 0 | 0 | 0 | 0 |
| 60-69 | 4 | 2 | 5 | 0 | 0 |
| 70-79 | 1 | 1 | 100 | 1 | 100 |
| **Total** | **92** | **16** | **17.4** | **21** | **22.8** |

**Table III: Prevalence of depression and anxiety by gender.**

| Sex | Depression | | Prevalence(%) | Anxiety | | Prevalence(%) |
|---|---|---|---|---|---|---|
| | Pts with | Pts w/out | | Pts with | Pts w/out | |
| Male | 7(16.7) | 35(76.2) | 7.6 | 11(26.2) | 31(73.8) | 11.9 |
| Female | 9(18) | 41(82) | 9.8 | 10(20) | 40(80) | 10.9 |
| **Total** | | | **17.4** | | | **22.8** |

The overall prevalence of anxiety was 22.8% with males having a higher prevalence (11.9%) than females (10.9%). Tables II and III show the prevalence of depression and anxiety by age group and the prevalence by gender respectively. Eighty three (90.2%) of the patients studied were under 50 years of age with 13 patients (prevalence of 14.1%) having depression and 20 patients (prevalence of 21.7%) with anxiety.

## DISCUSSION

Tinnitus is a symptom of unknown pathophysiology with few therapeutic measures [5] which may manifest with co-morbid psychological stresses also necessitating psychiatric treatment. [6, 7] This impinges on the lives of individuals with the extreme of cases manifesting with suicide. [8]

The reported prevalence of psychological stress in patients suffering from tinnitus is from epidemiological studies conducted in other countries of the world. [9, 13, 14] In our study, a total 687 patients presented with various otologic diseases, 104(15.1%) of these had tinnitus. Our study also shows low prevalence rates of depression and anxiety in patients in our environment. This is at variance with other studies where the prevalence of depression as high as 60% was recorded. [9] The prevalence of depression was higher in females than males, the converse was the case with anxiety. However, 83 (90.2%) patients were under 50 years of age, indicating affectation of the active and productive age group of our environment. This no doubt will cause a decline in productivity and have untoward negative effects on our growing economy as tinnitus, depression and anxiety have severe consequences on patients' mental state and ability to function in major productive areas of their lives. We recommend the screening or assessment for psychological distress in tinnitus sufferers so that patients can be adequately treated. This also calls for a close collaboration of the audiology and psychiatric units of all health institutions in the management of these patients.

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