



## Psychopathology among a sample of hearing impaired adolescents



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### ABSTRACT

Hearing impairment is a recognized cause of emotional and psychological disturbances worldwide, however little is known about this condition in Nigeria. The aim of this study is to compare the prevalence of psychopathology between hearing impaired adolescents and healthy adolescents. Students attending two special schools for the hearing impaired were assessed for psychopathology with the help of a trained signer and their teacher, using the International Classification of Diseases Diagnostic Criteria (ICD 10). Fifty two hearing impaired students and 52 age and sex matched controls from the same school were also interviewed using the same instrument. The mean age of the hearing impaired students was 16 (sd = 3.8), while for the controls the mean age was 16 (sd = 2.5). Psychopathology was present in 10 (19%) of the hearing impaired adolescents compared to 2 (4%) among the control group, this difference was statistically significant ( $\chi^2 = 4.62$ ,  $p = 0.03$ ). The most common diagnosis was generalized anxiety disorder 4 (8%), followed by depression 2 (4%). Years spent in school ( $t = 4.81$ ,  $p = 0.001$ ), primary guardian ( $\chi^2 = 18.3$ ,  $p = 0.001$ ) and mean income of guardian ( $t = 7.10$ ,  $p = 0.001$ ) were all significantly different between the two groups. Psychopathology is relatively common in this population. Proper assessment and treatment should be made available for this population group. A limitation to this study is communication difficulty which made only a third party assessment possible; this may affect the generalizability of the findings.

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### 1. Introduction

Hearing impairment is a multidimensional condition with both medical and social aspects. Earlier studies among the deaf were on inpatient psychiatric population (Pollard, 1994; Daigle, 1994). In the majority of these studies, deaf patients were admitted along with hearing patients, evaluated by professionals at these facilities as if they were hearing, and communication with them was as if they understood spoken language (Trybus, 1983). Thus because of the lack of specialized deafness expertise, the assessment were considered to be of questionable reliability and validity (Black and Glickman, 2006).

Pollard (1994) conducted a study of a combined inpatient and out patient hearing impaired group and found a slightly higher percentage [8%] of schizophrenia in the this sample compared to 7% in the hearing population, he also reported 7% unclassified

psychotic disorder among the hearing impaired, as against 2% in the hearing population. Mental retardation also tended to be diagnosed in the hearing impaired. Trybus (1983) and Pollard (1994) reported a rate of 3.7% among the hearing impaired compared to 1.7% among hearing sample.

Among hearing impaired adolescents, van Gent et al. (2007) reported a high prevalence of psychopathology such as, emotional disorders 27%, behavioral disorders 11%, and other disorders 7%. However, they suggested by correlation studies that it was not deafness on its own that was responsible for the occurrence of psychopathology. Among hearing impaired adults, it has been reported (Wallhagen et al., 2001) that they are 28% more likely to find their overall mental health fair or poor with the rate of depression reported to be approximately one and a half times higher than for people with hearing problems.

In a review by Bailly et al. (2003), they pointed out that assessing psychiatric disorders in hearing impaired children and adolescents presents methodological problems, especially because of poor language development and the difficulties encountered in establishing rapport with these children. Much of previous studies

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have treated hearing the hearing impaired like their hearing counterpart without consideration for the language difficulties and communication problems in this adolescents (Bailly et al., 2003). More recent studies have used signed visual aids (CD-ROM) in assessing psychopathology among hearing impaired, however this will only be helpful in population where the use of sign language is readily understood by the respondents, Cornes et al. (2006) this is not the case in this population. In this study we attempted to overcome these difficulties by interviewing the hearing impaired student in the presence of the teacher and the guardian. Questions were communicated to the student through the teacher who communicated with the student using sign language, gestures and writing.

Bailly et al. (2003) also reported that, the prevalence of depression and, anxiety disorders particularly social phobias in deaf and hard of hearing adolescents is comparable to those found in hearing young people, although they suggested that hearing impaired adolescents and children show a greater degree of impulsivity, without a higher prevalence rate of attention-deficit/hyperactivity disorder (ADHD). They also reported that factors such as medical conditions, severity of hearing impairment, communication ability, and social deprivation play a role in the development of psychopathology among hearing impaired adolescents and children.

The objective of this study is to determine the prevalence and type of psychopathology among a sample of hearing impaired adolescents and to identify factors that may predispose them to developing psychopathology.

## 2. Method

This study was conducted among hearing impaired adolescents attending special schools for the hearing impaired in Ife-Central and Ife East local government areas of Osun State, Nigeria. The schools are located within the premises of other regular schools but have specialists, trained in American Sign Language who teach the children.

The schools have students at various levels of education, ranging from primary one to primary six. However only students who have had a minimum of five years of schooling were included in this study.

Consent was taken from the local education authority (LEA), the school authorities and the student's parent or guardian after the purpose of the study was explained to them, before the student was approached. The purpose of the study was also explained to each student who agreed to participate in the study after which each signed a consent form which stated the purpose of the study and explained that participation or non participation will neither attract any penalty or reward. Students matched for age and sex, from the same school as the index respondent, but without any form of hearing impairment were selected as controls, Consent for the study was also obtained from the Obafemi Awolowo University Teaching Hospitals Complex, ethical committee. A total of 60 students with hearing impairment were approached consecutively in their classroom and interviewed using a semi structured interview schedule, however only 52 (86.6%) eventually participated in the study, 52 age and sex matched controls were also recruited.

**Inclusion criteria:** All hearing impaired students included in the study have had at least 5 years of schooling.

There must be no other disability such as cerebral palsy, seizure disorders, visual impairment or other evidence of impaired intellectual functioning.

**Exclusion criteria:** Students with less than 5 years of schooling were excluded.

Students with evidence of cerebral palsy, visual impairment, history of seizures or evidence of impaired intellectual functioning were all excluded.

## 2.1. Procedure

Each respondent was first examined physically, by the second author (Dr Akinpelu, ENT Surgeon). The respondents were then interviewed by the psychiatrist (Dr Mosaku Psychiatrist) with the help of the student's class teacher, a trained signer, who used sign language to communicate with the respondent. The teacher had earlier been trained in the use of the questionnaire and clarifications made, however clarifications were also made during the interview when necessary. The parent/guardian of each respondent was then interviewed by the psychiatrist. For each respondent the socio-demographic characteristic was obtained using a prepared socio-demographic questionnaire, the questionnaire also include questions on possible cause of hearing impairment, use of hearing aids, parents hearing status and mode of communication at home. The teachers also gave an assessment of the respondents' sign language proficiency. Using the criteria in the clinical descriptions and diagnostic guidelines of the International Classification of Diseases Diagnostic manual (ICD-10), specific diagnosis was made by the first author (Dr. Mosaku).

## 3. Results

The mean age of the hearing impaired children was 16 (sd = 6.8) compared to 16 (sd = 2.5) among the control group. The sex distribution was the same for both the index and control group, there was however a significant difference in the number of years already spent in school between the two groups ( $t = 4.81$ ,  $p = 0.001$ ), and their present level of education ( $\chi^2 = 38.10$ ,  $p = 0.001$ ), there was also a statistically significant difference in the number of respondents with psychopathology between the two groups ( $\chi^2 = 4.62$   $p = 0.03$ ). (Table 1).

Among the hearing impaired, 12 (23.1%) had information on the cause of the hearing impairment, 11 (21.2%) had sought medical attention for the problem while 7 (13.5%) were not sure whether any treatment was sought at all, 4 (7.7%) could benefit from the use of hearing aids. Also 2 (3.8%) have siblings with hearing impairment, while communication between those with hearing impairment and relatives was mainly by writing, speech and gestures (65%), only about a third communicate with family members using sign language (Table 2). Among the hearing impaired 10 (19.2%) had some form of diagnosable psychopathology, while among the control group, 2 (3.8%) had a diagnosable psychopathology (Table 3).

## 4. Discussion

Studies among the hearing impaired population have always had methodological problems, mainly due to the problem of communication between respondents and the interviewers. In this study we have tried to reduce such difficulties by having the client's teacher, and a trained interpreter who is trained in sign language, present during the interview with the client.

In this study we found that 19% of the adolescents studied had some form of diagnosable psychopathology compared with only 4% in the control group, this difference was statistically significant. The main diagnoses were generalized anxiety, adjustment disorder and depression. The high prevalence rate of psychopathology found in this study is not uncommon in this group of patients. In a review by Bailly et al. (2003), they reported rates varying from 15 to 60% from various studies. Many reasons have been given for such high prevalent rates of psychopathology, such as inaccurate assessment on the part of the interviewer, immature language exhibited by the client, difficulty with establishing rapport with the client due to poor emotional-behavioral functioning of the client.

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