

# Depression and Anxiety Disorders Among Deaf Young People

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## Abstract

Mental health of Deaf young people has received negligible attention. This study determined the prevalence of depression and anxiety disorders among Deaf young people.

Seventy-five Deaf young people participated in this mixed method descriptive cross-sectional study, participants were drawn from special education centers and mainstream schools. A structured, interviewer-assisted questionnaire consisting of Beck Depression Inventory and Beck Anxiety Inventory was used for quantitative data collection, and semi-structured interview questions used for qualitative data collection. The data was analyzed using descriptive and inferential statistics, and narrative content analysis of the qualitative data.

The mean age of respondents was  $15.7 \pm 4.05$  years. The prevalence of depression and anxiety disorder among respondents was 8% and 33% respectively, with a strong positive correlation between anxiety and depression. Only 10.7% of respondents had family members who could communicate using sign language. Educational level was the sole predictive factor of increased prevalence of depression and anxiety disorders, the higher the educational level, the higher the anxiety and depression score among the respondents. The attention and care received in special schools, at home with parents and other social support groups helped Deaf young people to cope with pressure and anxiety.

Depression and anxiety disorder amongst Deaf young people is high, yet only a few have families that are attentive/responsive to their needs. There is need for greater access to services that would improve the mental health and promote social inclusion of Deaf young people.

**Keywords:** Depression, Anxiety disorder, Young people, Deaf, Mental health.

## Introduction

“Mental health is a state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to his or her community”.<sup>1</sup> Mental health demonstrates a function of satisfaction to an individual or the society.

Young people with hearing loss are at greater risk of mental health challenges due to their living conditions, stigma, discrimination or exclusion, disability, or lack of access to quality support and services. Hearing loss affects an individual's ability to hear and makes it difficult to recognize or differentiate various auditory signals.<sup>2</sup> The invisible nature of the hearing loss implies that individuals with hearing loss are easily ignored in the society, especially when other, more dominant health issues demands attention. When compared to hearing peers, people with hearing loss face more behavioral and social problems;<sup>3</sup> they often experience a greater level of psychosocial challenges with reduced satisfaction, loss of interests in physical and recreational activities, and an increased rate of being withdrawn or isolated.<sup>4,5</sup> These individuals may also display difficulties in abstract thinking and problem-solving skills, ability to form peer relationships, low self-esteem, and ultimately increased psychological distress.<sup>6</sup> Therefore, persons with hearing loss are at increased risk of mental health challenges such as depression and anxiety disorders.

Depression and anxiety disorders have been categorized as the two most common mental health problems affecting the world population.<sup>7</sup> Global estimates put the percentage of the population suffering from depression and anxiety disorders at 4.4% and 3.6%, respectively.<sup>7</sup> Depressive disorders rank as the single largest contributor to non-fatal health loss – 7.5% of all Years of Life Disabled (YLD) – while anxiety disorders rank sixth.<sup>7</sup> Anxiety disorders also appear in the top 10 causes of YLD in all World Health Organization (WHO) regions.<sup>7</sup> It is estimated that about 7 million (prevalence of 3.9%) and about 4 million (prevalence of 2.7%) Nigerians suffer from depression and anxiety disorders, respectively.<sup>7</sup>

The prevalence of hearing impairment (total deafness, hearing loss, or other hearing-related impairment) in Nigeria is 23.7%,<sup>8</sup> while approximately 60% of deaf and hard of hearing students have poor quality of life.<sup>9</sup> In most African countries, majority of the studies conducted among individuals with hearing

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loss have largely centered on stress and psychosocial issues, academic achievement, and speech and language development while there is a dearth in research conducted on mental health among people with hearing loss.<sup>10-12</sup>

Moreover, there are very few recent studies that have investigated depression and anxiety symptoms among the Deaf and/or hard of hearing in Sub-Saharan Africa.<sup>13</sup> This study therefore sought to determine: (i) the prevalence of depression and anxiety disorders (ii) the socio-demographic predictors of depression and anxiety disorders (iii) impact of deafness on mental wellbeing (iv) experiences of social inclusion and exclusion (v) coping strategies employed and (vi) mental health services available to Deaf young people.

## Methods

The study adopted a descriptive cross-sectional design to assess the prevalence of depression and anxiety disorder among Deaf young people in Ogbomosho, South-West Nigeria.

A purposive sampling technique was applied in selecting the study population which comprised of Deaf and hard of hearing young people aged between 10 and 24 years who communicate primarily using sign language. They were recruited from special education centers or mainstream school that provide support for Deaf individuals. Deaf and hard of hearing young people who had multiple disabilities and those who failed to understand the contents of the study questionnaires independently or with the assistance of a sign language interpreter were excluded from this study. Ethical approval was obtained from the Oyo State Research Ethics Review Committee (AD13/479/1582). Participants who met the inclusion criteria were recruited. Written informed consent were obtained from the participants and in case of minors, informed consent was obtained from parents or guardians and assent from the participants. The services of a sign language interpreter were enlisted to assist in describing the study procedure and objectives to the respondents.

The study utilized a mixed method with a structured, interviewer-assisted questionnaire for quantitative data collection, and semi-structured interview questions for qualitative data collection. The questionnaire consisted of socio-demographic items used to investigate the factors predisposing Deaf young people to depression and anxiety; Beck Depression Inventory (BDI-II), a 21 item self-reporting assessment tool to assess the prevalence of depression<sup>14</sup> and Beck Anxiety Inventory (BAI), a 21 item self-reporting assessment tool to assess the prevalence of anxiety.<sup>15</sup> The scoring system of BDI-II and BAI were utilized as previously described.<sup>14,15</sup> In-depth Interviews (IDI) was conducted with 13 participants and 6 Key Informant Interviews (KII) were conducted, 4 KIIs were done

with parents and 2 KIIs with teachers of the Deaf young people. The interviews were a comprehensive way to explore the participants' experiences of social inclusion/exclusion, the degree of social support they received and how these had an effect on their emotional wellbeing. The interviewer was assisted by a sign language interpreter in ascertaining the impact of deafness on well-being, the experiences of inclusion and exclusion, the coping strategies and the mental health services available to the Deaf young people.

Descriptive statistics was used to summarize the data, while the association between variables was analyzed using Students t-test, Chi-square and multiple regression tests. The level of statistical significance was set at 5%. Narrative Analysis was used to analyze the content from the various interviews, observations, and experiences of participants.

## Results

Seventy-five respondents participated in the study. The age range of the participants was 10 to 24 years with a mean age of  $15.7 \pm 4.05$  years, male respondents were 47 (62.7%). Based on the school records and accounts of parents/guardians, the causes of deafness among the respondents were: congenital/hereditary deafness (74.7%) and acquired deafness secondary to infections and diseases (25.3%). Only 66.7% of the respondents live with their parents while just 5.3% of the respondents are working. Other socio-demographic variables are shown in Table 1. From the BDI-II scores, the prevalence of depression among the respondents was 8% (Table 2). Only 5% had moderate depression with BDI-II scores within 20-28. None of the respondents had severe depression. The prevalence of anxiety among the respondents was 33%. Most of the respondents (67%) did not suffer from anxiety with BAI scores between 0 – 7; while only 2% had severe anxiety (Table 3). The only socio-demographic variable that was a statistically significant predictor of depression was the level of education ( $p = 0.000$ ) (Table 4). There was a significant difference between the mean anxiety score by the level of education of respondents ( $p = 0.000$ ) (Table 5). The higher the level of education, the higher the anxiety score. There was also a significant difference between the mean anxiety score among those living with their parents and those who were not ( $p = 0.004$ ) (Table 5). The score was higher among those who were not living with their parents. The study also revealed that there was a significant difference between the mean anxiety score and the use of sign language in the family ( $p = 0.009$ ) as the anxiety score was higher among those who used sign language within their families. (Table 5)

## Qualitative Analysis of Interviewer-assisted In-depth and Key-informant Interviews

**Table 1: Socio-demographics of respondents (n=75)**

Variable	Frequency	Percentage
<b>Age</b>		
10-14yrs	36	48.0
15-19yrs	23	30.7
20-24yrs	16	21.3
<b>Gender</b>		
Male	47	62.7
Female	28	37.3
<b>Onset of deafness</b>		
Congenital	56	74.7
<3 years	10	13.3
3-5 years	6	8.0
=6 years	3	4.0
<b>Current Level of Education</b>		
Primary	44	58.7
Secondary	26	34.7
College of Education	4	5.3
University	1	1.3
<b>Family Structure</b>		
Both parents	39	52.0
Stepparents	3	4.0
Single Parent	10	13.3
Extended Family	23	30.7
<b>Social Class</b>		
Upper Class	13	17.3
Middle Class	17	22.7
Lower Class	45	60.0
<b>Signlanguage communication with family</b>		
Yes	6	10.7
No	67	89.3

**Table 2: Grades of Depression (n=75)**

Depression	Frequency	Percentage
Minimal depression	69	92
Mild depression	2	3
Moderate depression	4	5

**Table 3: Grades of anxiety disorder (n=75)**

Anxiety Disorder	Frequency	Percentage
Minimal anxiety	50	67
Mild anxiety	6	8
Moderate anxiety	17	23
Severe anxiety	2	2

**Table 4. Socio-demographics correlates of depression**

Variables	Mean $\pm$ SD	t-cal/F-test	p-value
<b>Gender</b>		- 0.496	0.622
Male	6.68 $\pm$ 5.02		
Female	7.29 $\pm$ 5.26		
<b>Age at onset of deafness</b>		0.455	0.715
Born deaf	6.77 $\pm$ 4.86		
< 3 years	7.80 $\pm$ 5.75		
3-5 years	8.00 $\pm$ 7.29		
6 years & above	4.33 $\pm$ 2.89		
<b>Level of Education</b>		25.805	0.000
Primary	4.05 $\pm$ 2.73		
Secondary	10.19 $\pm$ 3.69		
College of Education	13.37 $\pm$ 9.22		
<b>Living with parents</b>		-1.175	0.244
Yes	6.22 $\pm$ 4.82		
No	7.88 $\pm$ 5.56		
<b>Sign language communication at home</b>		0.567	0.572
Yes	7.87 $\pm$ 6.66		
No	6.79 $\pm$ 4.92		

### The impact of deafness on the mental wellbeing of Deaf young people

The participants described their experiences growing up with deafness as a situation mixed with sadness, discouragement, worry, and bitterness because of the treatment meted out by friends, family members and relatives either as a result of their inability to communicate efficiently or due to their inability to communicate at all.

A 17-year-old male participant narrated: “My father looks down on me. I feel he hates me. Because whenever I ask him to buy something, he refuses, and he doesn't give me money... with all these, I feel worried and depressed. [I am sent] on lots of errands at home, to fetch water and do a lot of things. I feel maltreated... I also feel that the hearing hates the Deaf but the Deaf

love themselves”.

A 20-year-old female participant also narrated her experience: “Yes...They look down on me. They abuse me. They abuse and curse the Deaf...These abuses make me feel discouraged and depressed... I have nobody that is advising me on my health. I am mostly on my own... I do not participate in social activities in school except that I join the Deaf choir in the church”.

### The experiences of inclusion and exclusion among young people with deafness

Social exclusion was experienced mostly by participants in mainstream schools. They narrated instances where they were excluded from socializing with others due to communication barriers.

**Table 5: Socio-demographic correlates of anxiety**

Variables	Mean $\pm$ SD	t-cal/F-test	p-value
<b>Gender</b>		-1.270	0.208
Male	6.46 $\pm$ 8.06		
Female	9.11 $\pm$ 9.69		
<b>Age at onset of deafness</b>		0.459	0.712
Born deaf	6.88 $\pm$ 8.30		
< 3 years	8.60 $\pm$ 8.88		
3-5 years	11.00 $\pm$ 13.24		
6 years & above	7.33 $\pm$ 9.24		
<b>Level of Education</b>		27.275	0.000
Primary	2.18 $\pm$ 3.31		
Secondary	14.35 $\pm$ 7.54		
College of Education	17.25 $\pm$ 15.65		
<b>Living with parents</b>			
Yes	5.46 $\pm$ 7.17	-2.934	0.004
No	11.44 $\pm$ 10.27		
<b>Sign language communication at home</b>			
Yes	15.00 $\pm$ 11.69	2.691	0.009
No	6.55 $\pm$ 7.96		

As narrated by one of the participants: *"I have had terrible experiences because of what people do to me especially at home; I keep to myself at home. I am not allowed to go out. I just do chores at home and read while in school. I am also not allowed to participate in activities in school."*

A parent also corroborated this by sharing her son's experience. She said: *"When he attended the normal school, some of his colleagues laugh at him. He comes home and tell me 'mummy, they are laughing at me'. The teachers too were not encouraging. They say he doesn't talk and they don't know how to evaluate him. So, I decided to take him to where he will receive the sign language education. Since then, there has been no problem..."*

#### **Coping strategies employed by young people with deafness**

The participants stated that they cope by engaging in activities that occupy their attention and time such as sporting activities in school. Some also narrated that families, friends, and religious institutions were a big support to them.

A 15-year-old female participant said: *"When I feel down, I have deaf friends that usually encourage me especially, (mentions name)...I participate in athletics in school and sometimes [I am] sent to the market to buy things. I also go to parties with my family"*.

Another participant stated: *"I worry a lot and get discouraged because I am deaf. But deaf people in*

*the church always encourage me. I joined some sports in school. I can run"*.

#### **Discussion**

This study was conducted among young people who were Deaf and hard of hearing in Nigeria and assessed the prevalence of depression, anxiety disorders, the predictors of depression of anxiety disorders, experience of social inclusion and exclusion experiences as well as coping strategies among the respondents. The mean age of the respondents was 15.7 years yet most of the respondents were in primary school. This demonstrates that hearing-impaired adolescents are likely to be behind in schooling or slowed down in education attainment than hearing adolescents, hearing-impaired adolescents are on the average three years behind in schooling age compared with hearing adolescents of the same age.<sup>16</sup> This observation may be secondary to several factors, parental attitude is likely factor, there may be a preference by parents to prioritize the education of hearing siblings over the hearing-impaired siblings.<sup>16</sup> Another possible factor for the delay in the education is the societal attitude in many developing societies towards hearing-impaired children and young people. Hearing-impaired children and young people are often be made to learn trades or crafts in these societies instead of advancing their schooling.<sup>16</sup> Thus, there is a need for specific public policies to ensure provision of adequate resources such as special schools, trained teachers and teaching materials to ensure appropriate

schooling of hearing-impaired children and young people. These public policies must include deliberate efforts for early screening of hearing loss. In many developing countries the diagnosis of hearing loss is quite late compared to developed countries due largely to the absence of newborn hearing screening programs and non-implementation of hearing screening for school age children.<sup>17</sup>

Majority of the respondents reported that no other family member could communicate using sign language. About 90-95% of Deaf persons are born into families with normal hearing individuals,<sup>18</sup> the family members may be unaware of the Deaf culture and/or sign language. Socio-economic challenges may prevent these family members from accessing language tools to help them communicate better with the hearing-impaired family member.<sup>19</sup> Difficulty with communication may be an important source of distress and a major contributor to depression and anxiety amongst the hearing impaired.<sup>16</sup> Provision of free sign language training for anyone who is interested can be a public health intervention targeted at improving anxiety in the Deaf population.

The respondents expressed mild to moderate depression there was no case of severe depression in the study cohort. This may be a pointer to existence of effective coping mechanisms. The special school setting attended by some of the respondents is a known protective factor for Deaf young people.<sup>9</sup> Special schools often tend to have fewer pupils and trained teachers who can address problems Deaf young people have better than mainstream schools.<sup>20</sup>

The overall prevalence of anxiety among the respondents at 33% was much lower than the 75.47% prevalence of anxiety among the Deaf in Nairobi Kenya.<sup>21</sup> It is possible that the support system available to the cohort in the Nigerian study was much better in relieving mental health challenges. The strength of the support systems also appeared to be corroborated by the lack of notable difference in the prevalence of anxiety between the Deaf young people and their hearing counterparts. A study among selected secondary school students in an urban city in Nigeria found the prevalence of anxiety disorders was 32.97%.<sup>22</sup> A strong positive correlation was seen between anxiety score and depression suggesting that as anxiety worsened, the depression also worsened. The presence of one mental illness is known to aggravate other mental illnesses moreover, anxiety and depression are highly co-morbid.<sup>23</sup> The level of education was associated with higher depression and anxiety scores in this study. This may be due to the fact that as the Deaf young people advanced in their education, they lose the protective cocoon of special schools and became more exposed to mainstream schools where there were limited sign language

teachers and interpreters. During the in-depth interviews, majority of the participants also suggested the need to build more special schools as they found more solace there than in mainstream school settings.

The social exclusion experienced according to the participants in this study is systemic and was perpetrated by their peers and colleagues in schools, siblings at home, and the people in the community as well as in the healthcare system. This is a testament to the lingering problem of societal attitude towards hearing impaired individuals stated earlier.<sup>16</sup> addressing this societal attitude is instrumental to achieve social inclusion of Deaf young persons.

The importance of a support system was further emphasized as a coping strategy by the study participants. The support systems employed include engagement in activities that occupied their attention and time, finding solace in relating with parents, older friends, family members and church members.<sup>9</sup> It is worthy of note that none of the Deaf young people interviewed in this study benefited from any form of public/private mental health services with only a few of them exhibiting knowledge of mental health services. This calls for provision of mental health services for Deaf young people, this should run concurrently with health strategies to address hearing loss.

## Conclusion

Deaf young individuals have increased risk of mental illnesses as observed in the study. A host of factors play important roles in the level of mental problems faced by Deaf young people. Difficulty with communication at home and in school, including the prevailing societal attitude predicts psychological distress for Deaf young people. Therefore, parents and siblings of Deaf young people should learn sign language to communicate effectively with them, this will reduce distress and facilitate social interaction. Adequate provision and access to mental health resources for Deaf young persons would minimize the impact of mental health problems such as anxiety and depression in this disadvantaged group.

## References

1. World Health Organization: Deafness and Hearing Loss – Fact Sheet. Available on <https://www.who.int/news-room/fact-sheets/detail/deafness-and-hearing-loss>. 2019. Accessed 20 May 2024
2. Choudhury M. Hearing Loss A Triggering Factor to Depression: *A Systematic Review*. *Sch J Oto* 2019; 2(3).
3. Oyewumi AM, Akangbe T, Adigun OT. Personality factors as correlates of perceived quality of life among adolescents with hearing impairment in selected secondary schools in Lagos State, Nig *J Educ*

*Pract.* 2013; **4**:162-8.

4. Hogan A, Shipley M, Strazdins L, Purcell A, Baker E. Communication and behavioural disorders among children with hearing loss increases risk of mental health disorders. *Aust N Z J Public Health.* 2011; **35**:377-83.
5. Fellingner J, Holzinger D, Sattel H, Laucht M. Mental health and quality of life in deaf pupils. *Eur Child Adolesc Psychiatry.* 2008; **17**:414-23.
6. Brown PM, Cornes A. Mental health of deaf and hard-of-hearing adolescents: What the students say? *J Deaf Stud Deaf Educ.* 2015; **20**:75-81.
7. World Health Organization. Depression and Other Common Mental Disorders. In: Global Health Estimates. Available on <https://www.who.int/publications/i/item/depression-global-health-estimates>. 2017. Accessed 24 May 2024.
8. Treat S. How deaf education and special education is being advanced in Nigeria. In: Deaf Education, Gallaudet University. Available on <https://prezi.com/ckdvqq0rv5cx/deaf-education> 2016. Accessed 20 May 2024
9. Jaiyeola MT, Adeyemo AA. Quality of life of deaf and hard of hearing students in Ibadan metropolis, Nigeria. *P L o S O N E .* 2018; doi:10.1371/journal.pone.0190130
10. Oyewumi AM, Sotade FR. Stress Coping Mechanisms among Parents of Children with Hearing Loss in Ogun State, Nigeria. *Int J Appl Psychol Hum Performance.* 2010; **6**:1405-18
11. Morere D. Measures of reading achievement. In: Assessing literacy of deaf individuals, Eds: Morere D and Allen T, New York, Springer, 2013.
12. Knoors H, Marschark M. Language planning for the 21st century: Revisiting bilingual language policy for deaf children. *J Deaf Stud Deaf Educ.* 2012; **17**:291-305.
13. Adigun, OT. Depression and Individuals with Hearing Loss: A Systematic Review. *J Psychol & Psychother.* 2017; doi:10.4172/2161-0487.1000323
14. Beck AT, Steer RA, Brown GK. Manual for the Beck Depression Inventory– II. San Antonio, TX, Psychological Corporation. 1996.
15. Beck AT, Steer RA. Beck Anxiety Inventory Manual. San Antonio, TX, Psychological Corporation. 1993.
16. Mosaku K, Akinpelu V, Ogunniyi G. Psychopathology among a sample of hearing-impaired adolescents. *Asian J Psy* 2015; **18**:53–6.
17. Ajavon PA. The Incorporation of Nigerian Signs in Deaf Education in Nigeria. In: Peter Lang Verlag. 2021. Available on <https://www.peterlang.com/document/1095191> Accessed 23 May 2024.
18. Mitchell RE, Karchmer MA. Chasing the Mythical Ten Percent: Parental Hearing Status of Deaf and Hard of Hearing Students in the United States. *Sign Lang Stud.* 2004; **4**(2):138-163.
19. Meadow-Orlans KP, Sass-Lehrer M, Mertens DM. Parents and their deaf children: the early years. Washington DC, Gallaudet University Press, 2003.
20. Ogundiran O, Eegunranti BA, Ogundiran AC, Falade J, et al. Psychiatric Morbidity among Adolescent Students With Deafness In A Nigerian School For Persons With Special Needs. *Adv Soc Sci Res J.* 2018; **5**(9):338-45.
21. Anyango NI. Assessment of association between anxiety, depression and alcohol use disorders among the deaf in Nairobi East. University of Nairobi Research Archive, Nairobi. 2018. Available on <http://erepository.uonbi.ac.ke/handle/11295/104751> Accessed 23 May 2024.
22. Frank-Briggs AI, Alikor EA. Anxiety Disorder amongst Secondary School Children in an Urban City in Nigeria. *Int J Biomed Sci.* 2010; **6**(3): 246–51.
23. Brown TA and Barlow DH. Classification of anxiety and its disorders. In: Anxiety and its disorders: The nature and treatment of anxiety and panic. 2nd ed, Eds: Barlow DH, Guilford Press, New York, 2002, 292-327.