

***Effect of Interpersonal Psychotherapy on Amount of Daily Hearing Aids Usage amongst Students with Hearing Impairment in Jos Metropolis, Nigeria***

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**Abstract**

*This study investigated the effect of Interpersonal Psychotherapy on Amount of Daily Hearing Aids Usage amongst students with hearing impairment in Jos metropolis. One research question and hypothesis were raised to guide the study. The study adopted a pretest-posttest control group true experimental design type. Random sampling technique was used to share the samples into experimental and control groups; each group had 10 subjects. Interpersonal Psychotherapy (IPT) was used for treatment. Amount of Daily Hearing Aids Usage Scale (ADHAUS) was used for data collection at pre and post-tests. The validity of the instrument was obtained using Kendal Tau statistics as 0.888, while the reliability using Cronbach's Alpha Coefficient was 0.89. Simple frequency count, mean score, percentage and bar chart were used to answer the research question, while chi-square was used to test the hypothesis at 0.05 level of significance. Findings revealed that IPT was effective in increasing amount of daily hearing aids usage, to a high positive level. It was recommended that professionals in Guidance/Counselling and Rehabilitation Sciences should carry out enlightenment campaign on the use of IPT to improve amount of daily hearing aids usage to a high positive level.*

**Keywords:** Interpersonal, Psychotherapy, Aids, Usage, Hearing, Impairment

**Introduction**

Amount of Daily Hearing Aids Usage is the number of minutes or hours a student with hearing impairment uses the hearing aid in a day. This is the total time, or sum of minutes in a day, that a student with hearing impairment uses hearing aids (within 24 hours) (Brooks, 1989). Counselling such as Interpersonal Psychotherapy is important when

considering amount of daily hearing aids usage (Weisman, 2006). An inquiry form approach can be used to investigate amount of daily hearing aids usage; to some extent, it identifies the factors that are likely to increase or diminish acceptance and amount of daily usage of hearing aids.

Interpersonal Psychotherapy is an empirically validated treatment for a variety of psychological and psychiatric maladies. It later became an empirically corroborated treatment for behavioural disorders. Furthermore, Interpersonal Psychotherapy focuses on conflict with self, one's feelings and others (Markowitz & Weisman, 2004). Weisman, Markowitz and Klerman (2007) highlighted that Interpersonal Psychotherapy is a counselling treatment that was originally designed to help people who had experienced deep grieves, caused by the death of beloved ones. It is both a counselling treatment and rehabilitation plan that helps students with hearing impairment who disuse or under-use their hearing aids. Many hearing impaired students have problems wearing hearing aids for fear of stigmatization, shame and discrimination from their school mates and the society at large. As a result, they disuse or under-use their hearing aids. It is expected that the Interpersonal Psychotherapy in this study, would help by counselling students with hearing impairment and with recurrent behaviour of disuse or under-use of hearing aids. IPT as counselling, rehabilitation and management plan, is a specially designed ten weeks counselling and therapy programme.

Hearing impairment is a decrease in sensitivity of the human hearing due to an existing damage within the organs of hearing. A student with hearing impairment is one whose organs of hearing are hurt and as a result, hearing acuity is deviated from the societal norm (Babudoh, 2008). Prior to the study, the researchers undertook a need analysis of possible hearing aids desire and interest; it indicates that students with severe hearing impairment often crave for hearing aids than those with moderate hearing impairment.

Hearing impairment is associated with many problems and psychological implications. Otana (2003) alleged that some students with hearing impairment live all of their lives in “silence” by not being able to access verbal information. The problem here is that the impairment simply affects the students' psycho-social development, academic performance, and other developments; it also grossly prevents a student from living a normal life. The impairment makes such students to experience sadness, grief, emotional and psychological instabilities; they experience one form of cognitive dissonance in form of conflicting thinking, feelings and disagreement in behaviour, such that as students with hearing impairment, they do not really like using hearing aids, especially when they get to Senior Secondary School One (SSS 1) and beyond. McGuire's Hearing Centers (2018) affirmed that one of the contributing factors of amount of daily hearing aids usage is the degree or quantity and quality of counselling or psychotherapy given to students with hearing aids. Unusual behaviour in many students with hearing impairment are altered or improved by counselling/psychotherapy.

Hearing aids are sound-amplifying devices designed to aid students whose hearing had deviated from the societal norms. It serves as a sound-amplifying device. Desjardins and Doherty (2009) emphasized that the device increases and modulates information for the wearer. Despite the usefulness of the sound amplifier to students with hearing impairment, there is a widespread dislike for its use by these students. Positive behaviour towards hearing aids usage is of great importance to the user and can never be over emphasized; the student is enabled to access sounds, information, lectures and discussions; and learning is properly facilitated. Positive behaviour towards hearing aids usage can lead to huge academic developmental strides and positive experiences in school and in life generally. Edwards (2014) opined that students with hearing impairment who disuse or under-use hearing aids experience so many developmental conflicts; their academic performances at school are often behind their regular peers for lack of good amount of daily hearing aids usage, leading to academic failure.

It is in the light of the above mentioned issues that the researchers find it necessary to investigate the effect of Interpersonal Psychotherapy on Amount of Daily Hearing Aids Usage amongst Senior Secondary School One (SSS 1) students with hearing impairment in Jos Metropolis, Nigeria. The specific objective of this study is to measure the extent to which Interpersonal Psychotherapy can be used to change the amount of daily hearing aids usage amongst students with hearing impairment.

### **Research Question**

1. What is the amount of daily hearing aids usage amongst students with hearing impairment before and after exposure to Interpersonal Psychotherapy?

### **Hypothesis**

**Ho1:** There is no significant mean scores difference between students with hearing impairment in Experimental and Control groups on amounts of daily hearing aids usage towards the use of hearing aids before and after intervention.

### **Methodology**

The study was true experimental research. The type of the experimental design used was the pretest-posttest control group design. There was random assignment of samples into experimental and control groups. See the table below:

**Table 1:** Random assignment of samples into experimental and control groups

	<b>Groups</b>	<b>Pretest</b>	<b>Treatment</b>	<b>Posttest</b>
Random Assignment	Experimental	O <sub>1</sub>	X	O <sub>2</sub>
	Control	O <sub>3</sub>	—	O <sub>4</sub>

$O_1$  = Pretest for Experimental Group  
X = Treatment  
 $O_2$  = Posttest for Experimental Group  
 $O_3$  = Pretest for Control Group  
– = Absence of Treatment  
 $O_4$  = Posttest for Control Group

The reason for using pretest–posttest design was that it helped evaluate the gain scores of the Experimental and Control groups. The independent variable is Interpersonal Psychotherapy and the dependent variable is Amount of Daily Hearing Aids Usage. Ezeanochie (2015) acknowledged that the pretest-posttest design is an effective method for ruling out extraneous variables such as testing effects of instruction and statistical regression. Threats to internal validity are controlled in the experiment by the use of control group in this kind of design (Awotunde & Ugodulunwa, 2004).

The school in focus was Plateau State School for the Deaf, Bassa, located in Jos metropolis, Plateau state, Nigeria. The school had forty-six (46) SSS 1 students; this size informed the choice of the school for this study. The overall population of Students with hearing impairment at the school was 474. Twenty (20) students with hearing impairment were sampled out of the 46 students with hearing impairment that formed the target population. This said sample of 20 students were randomly assigned to experimental and control groups such that each group had 5 males, 5 females; giving a total of ten (10) samples in each group. This was due to the paucity of students with moderate and severe hearing losses. The researchers used Audiological Investigation which was conducted on the 46 SSS 1 students with hearing impairment, only those with 41dB – 60dB and 61dB – 90dB were selected. The researchers purposely selected students by administering Otoscopy test and selecting all students who had clear Auditory Canal and are ready for hearing aids fitting. The sampling technique used considering those factors was the purposive sampling technique.

The instrument used in this research for data collection, at pre and post-tests was Amount of Daily Hearing Aids Usage Scale (ADHAUS). The instrument (ADHAUS) used to collect data in this study was given out to two professionals with PhD in the related field for validation; this validation was made to ensure that the instrument measures what it is intended to measure. The Chronbach's alpha reliability method was used in this study to ascertain the suitability of the research instrument. This is for estimating internal consistency. Cronbach's alpha ( $\alpha$ ) were computed from the variances of individual investigation items and variance of the total investigation scores. Cronbach's alpha is defined by the formula:

$$\alpha = \frac{K}{K - 1} \left[ \frac{1 - \sum S^2 \text{ items}}{S^2 \text{ test}} \right]$$

Where  $\alpha$  = Cronbach's alpha, K = Number of items, and  $S^2$  = Variance. The reliability index of the instrument was obtained to be 0.829.

The Audiometer helped in ensuring that only those with moderate (41 dB – 60 dB) and severe (61 dB – 90 dB) hearing losses are sampled. Otoscope helped in determining that only students with clean and clear auditory canal are picked as samples; this gave room for proper hearing aids functioning. Hearing aids helped ensured that fitting was done and made sure that each respondent was actually benefitting from the sound amplifying device. In the first week of the exercise, a pretest on Amount of Daily Hearing Aids Usage Scale (ADHAUS) was administered; the pretest lasted for 40 minutes only. Then the treatment (IPT) on the experimental group was given which lasted for ten (10) weeks. Finally, the post-test on Amount of Daily Hearing Aids Usage Scale (ADHAUS) was administered to both the experimental and control groups. The post-test also lasted for 40 minutes only. The designed IPT was a treatment programme; it is both a counselling and rehabilitation treatment programme. It consists of Social-Psychology Tips, Psycho-therapy Tips, Audio-Dance Play-lets, plenary and discussion sessions. This treatment programme was adapted (designed/developed) as a ten week counselling and therapy programme. It was a programme for enhancing and improving Amount of Daily Hearing Aids Usage of students with hearing impairment. About 80% of the sessions were individualized therapy/counselling while 20% was group sessions. Even though those in the control group were also given hearing aids, they were not exposed to Interpersonal Psychotherapy treatment. After the ninth week and precisely in the tenth week of the whole exercise; after administration of treatment on the experimental group, posttest on Amount of Daily Hearing Aids Usage Scale (ADHAUS) was administered to both the experimental and control groups. The posttest lasted for 40 minutes only.

The instrument, Amount of Daily Hearing Aids Usage Scale, was an instrument for scoring respondents' responses during the pretest and posttest and is a five points Likert Scale rated with Strongly Agreed (SA: 5 points), Agreed (A: 4 points), Undecided (U: 3 points), Disagreed (D: 2 points) and Strongly Disagreed (SD: 1 point). The instrument (ADHAUS) is divided into section A and section B. The Sections A and B of the instrument (ADHAUS) were analyzed using simple mean and frequency table to answer the research. To test the hypothesis, chi-square analysis technique was utilized. Chi-square test of independence was used for comparing difference between observed and expected frequencies after experiment had been carried out.

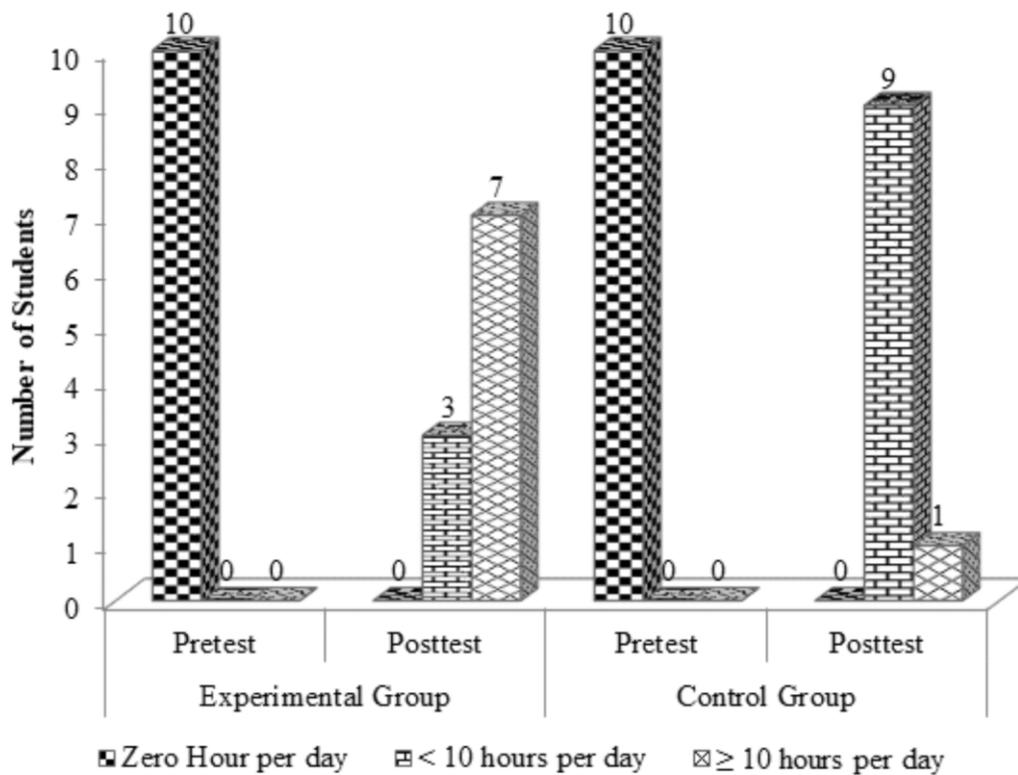
### **Presentation of results**

This section presented detailed results of the study: research question answered and hypothesis tested. The simple frequency count, mean score, percentage and bar charts were used to answer the research question, while chi-square was used to test the hypothesis at 0.05 level of significance.

**Research Question One:** What is the amount of daily hearing aids usage amongst students with hearing impairment before and after exposure to Interpersonal Psychotherapy?

**Table 2:** Amount of Daily Hearing Aids Usage amongst Students with Hearing Impairment

Amount of Daily Hearing Aids Usage	Experimental Group		Control Group	
	Pretest	Posttest	Pretest	Posttest
Zero Hour per day	10(100.00)	0(0.00)	10(100.00)	0(0.00)
< 10 hours per day	0(0.00)	3(30.00)	0(0.00)	9(90.00)
.....	0(0.00)	7(70.00)	0(0.00)	1(10.00)
Total	10(100)	10(100)	10(100)	10(100)



**Figure 1:** Bar Chart showing Amount of Daily Hearing Aids Usage of students with hearing impairment before and after exposure to Interpersonal Psychotherapy

Table 2 and figure 1 revealed the Amount of Daily Hearing Aids Usage amongst students with hearing impairment. Before exposure to IPT, 100% of the students with hearing impairment had zero (0) hours of daily hearing aids usage in both experimental and control groups. After intervention: the students' Amount of Daily Hearing Aids Usage in the Experimental group improved from 0 hour per day, to usage <10 hours per day with about 30% improvement and from 0 hour per day to usage ≥10 hours per day with about 70% improvement (experimental group). After intervention, the control groups' response was as follows: the students' Amount of Daily Hearing Aids Usage moved slightly from 100% disuse each day, to 90% disused, while 10% student's daily hearing aids usage (1 student) improved from 0 hour per day, to usage <10 hours (under-usage) per day in control group. It is important to say here that after intervention, majority of the students in the experimental group improved from usage that is less than 10 hours per day to usage that is greater than 10 hours per day.

**Ho1:** There is no significant mean scores difference between students with hearing impairment in Experimental and Control groups on amounts of daily hearing aids usage towards the use of hearing aids before and after intervention.

**Table 3:** Chi-square Analysis of Experimental and Control Groups on amount of daily hearing aids usage towards the use of hearing aids before and after intervention

Group	Amount of Daily Hearing Aids Usage			Row Total (RT)
	Zero hour per day	Less than Ten hours per day	Greater than Ten hours per day	
Experimental	0 (4.5)	3 (2.0)	7 (3.5)	10
Control	9 (4.5)	1 (2.0)	0 (3.5)	10
Column Total (CT)	9	4	7	20

**NB:** Expected Frequency in parenthesis (E), Grand Total is GT = 20

$$E = \frac{RT \times CT}{GT}$$

Emanating from Table 3, it showed that students in the experimental group used their hearing aids more than the students in the control group after exposure to treatment. In addition, the calculated chi-square value of 17.00 was greater than the tabulated chi-square value of 9.49 tested at degree of freedom 4 at 0.05 level of significance. The researcher therefore accepted the alternative hypothesis and rejected the null hypothesis.

### Discussion of the findings

The result of Research Question One in Table 2 revealed the amount of daily hearing aids usage of SSS 1 students with hearing impairment after exposure to Interpersonal

Psychotherapy (IPT). Basically, before exposure to IPT, hearing aids usage was 0 hours per day (disuse) in both experimental and control groups. But after exposure to IPT, majority of the students with hearing impairment in the experimental group started using their hearing aids for  $\geq 10$  hours per day. The result of Hypothesis One in Table 3 showed that the calculated chi-square value of 17.00 was greater than the tabulated chi-square value of 9.49 tested at degree of freedom 4 at 0.05 level of significance. There were considerably more students in the experimental group who wore their hearing aids  $\geq 10$  hours per day after intervention. This confirms the position of McGuire's Hearing Centers (2018) who avowed that one of the determinants of amount of daily hearing aids usage is the extent or quantity and quality of counselling given to students with hearing aids. Aberrant behaviours in many students with hearing impairment are modified by counselling or treatment. Others include quantity and quality of therapy and especially psychotherapy given to the hearing aid user.

### **Conclusion**

The findings revealed that Interpersonal Psychotherapy (IPT) has helped to change the amount of daily hearing aids usage of students with hearing impairment. IPT positively and highly improved amount of daily hearing aids usage of students with hearing impairment. IPT as psychoanalysis, counselling and therapy programme is therefore effective for rehabilitating students with hearing impairment who have low amount of daily hearing aids usage.

### **Recommendations**

Based on the findings of this study, the following recommendations are made:

1. Professional bodies such as National Association for Exceptional Children and Educational Audiologists should constantly conduct public counselling/awareness in schools, on Television and radio to boost awareness on the importance and effects of IPT amongst students with hearing impairment, in order to improve their amount of daily hearing aids usage to a high and positive level.
2. Federal Government of Nigeria should enact functional laws that will protect and provide hearing aids to students with hearing impairment; knowing that there is serious lack due to the high cost of hearing aids.

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