EFFECTS OF INTERPERSONAL PSYCHOTHERAPY ON BEHAVIOUR TOWARDS HEARING AIDS USAGE AMONGST STUDENTS WITH HEARING IMPAIRMENT IN JOS METROPOLIS, NIGERIA

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ABSTRACT  
This empirical study set out to investigate the Effects of Interpersonal Psychotherapy on Behaviour Towards the Use of Hearing Aids Amongst Students with Hearing Impairment in Jos Metropolis, Nigeria. The problem posed for the study was the negative behaviour of students with hearing impairment towards the use of hearing aids. The population consisted of all the 49 students with hearing impairment in senior secondary school 1 in Jos metropolis. 20 students were selected and randomly assigned to experimental and control groups and each group had 10 as the sample size. The study design was a pretest-posttest control group true-experimental design. Interpersonal Psychotherapy (IPT) was used as the treatment programme. The instrument used for data collection at both pre and post-tests was Behaviour of Usage of Hearing Aids Scale (BUHAS). The validity of the instrument was obtained using Kendal Tau statistic while the reliability was obtained using Cronbach’s Alpha Coefficient. The validity and reliability indexes for BUHAS were 0.816 and 0.810 respectively. One research question was raised and answered while one research hypothesis was formulated and tested to find out the extent to which IPT can be used to change the behaviour of students with hearing impairment towards the use of hearing aids. The simple frequency count, mean score and percentages were used to answer the research question while analysis of covariance was used to test the hypothesis at 0.05 level of significance. The findings revealed that before intervention, both the experimental and control groups showed high level of negative behaviour towards hearing aids usage, but after intervention, the experimental group showed a high level of positive behaviour. It was then concluded that IPT changes the behaviour of students with hearing impairment from negative to positive behaviour towards hearing aids usage. It was then recommended that interpersonal psychotherapy technique should be used to inculcate positive behaviour as well as change negative behaviour of student with hearing impairment.

Keywords: Interpersonal psychotherapy, Hearing aids, Hearing impairment

INTRODUCTION  
Behaviour is the sum total of human acts or reactions that are observable and measurable. Behaviours towards hearing aids could be positive or negative as well as that of proper usage or under-usage/disuse of hearing aids. Students with hearing impairment seem to disuse or under-use hearing aids due to so many developmental conflicts. The academic
performances of students with hearing impairment at school are often below that of their peers because of lack of hearing, leading to academic failure. It also seems that they experience psychological problems in life due to difficulties in understanding conversations: during class discussions, at home, social gatherings, in meetings and on the streets. Negative behaviour is human acts or reactions that are observable and measurable (Weisman, Markowitz & Kleman, 2007).

Negative behaviour of students with hearing impairment to the use of hearing aids is commonly seen in form of disuse and under-use of the equipment. Ali (2006) asserted that 80% of students who should benefit from hearing aids, do not use any.

Interpersonal Psychotherapy (IPT) is a rehabilitation plan that is a treatment that was originally designed to help people who had experienced deep griefs, caused by the death of beloved ones. It is both a treatment and rehabilitation stratagem, structured on academic considerations and social-psychology strategies. McGuire’s Hearing Centres (2018) says that aberrant behaviours in many students with hearing impairment are modified and improved by counselling or therapy. Okwudire (2012) affirmed that behaviour can be changed through training, therapy or treatment such as IPT. IPT is expected to help students with hearing impairment and recurrent behaviour of disuse or under-use of hearing aids.

Weisman, Markowitz and Kleman (2007) emphasized that IPT is a psychoanalysis and counselling sequencer for rehabilitating students who have wrong or negative behaviour towards hearing aids usage. IPT essentially took structure from psychodynamic psychotherapy, and from contemporary cognitive behavioural therapy (CBT) approaches in that it is time-limited and employs tasks, structured interviews, and assessment tools.

A student with hearing impairment is one whose organs of hearing are damaged and hearing is deviated from the norm. The researcher undertook a need analysis of hearing aids and indicated that students with severe hearing impairment often crave for hearing aids than those with moderate impairment. Hearing impairment may be caused by ototoxic substances, congenital factors syndrome, diseases, trauma and excessive exposure to noise.

Hearing aids are sound-amplifying devices designed to aid students whose hearing has deviated from the societal norms. Otana (2003) accentuated that positive behaviour towards the use of hearing aids enables students with hearing impairment access information, lectures or discussions, and learning is properly facilitated. Positive behaviour to the use of hearing aids can lead to huge academic developmental strides and experiences at school and in life generally.

World Health Organization (2006) opined that hearing impairment is associated with negative consequences and that only one out of five students who should benefit from a hearing
aid actually wears it. The eventual result is poor academic performance which also results to psychological trauma. A simple interaction with students with hearing impairment revealed that there is apathy for the use of hearing aids. They do not like using such aids to the maximum.

In most public schools, class size is often very large, this makes it difficult for teachers to attend to students with hearing impairment individually. The students with hearing impairment who are without hearing aids would not be able to hear exactly what the teacher who uses verbal instructions teaches in the classroom. Lack of access to verbal information affects understanding and subsequently academic achievement of students with hearing impairment; the cause of which is negative behaviour towards hearing aids usage. The problem then is “can IPT be used to change the behaviour of under-usage or disuse of hearing aids”?

The aim of the study is to find out the effects of interpersonal psychotherapy in changing the negative behaviour to positive behaviour of students towards the use of hearing aids. The specific objective of this study is to:

1. Determine the extent to which interpersonal psychotherapy can be used to change the behaviour of students with hearing impairment from negative to positive towards the use of hearing aids.

The following research question is posed:

1. What is the level of behaviour of students with hearing impairment after exposure to interpersonal psychotherapy?

The following hypothesis is formulated and tested at 0.05 level of significance:

1. There is no significant mean score difference between students with hearing impairment in experimental and control groups on behaviour towards the use of hearing aids after intervention.

The findings of the study will benefit students with hearing impairment, regular students, parents of students with hearing impairment, regular and special education teachers, curriculum developers, educational planners, researchers and publishers. Other professionals who stand to benefit from this study are: audiologists, hearing aids manufacturers, health personnel, government and many more.

This study is anchored on Festinger’s theory of cognitive dissonance developed in 1957. The theory states that human behaviour can be changed through manipulations such as treatment, psychotherapy or counselling (Festinger, 1957). The theory is related to this study because it involves giving of counsel and psychotherapy that will help students do away with wrong belief and bad behaviour (negative behaviour) towards the use of hearing aids. Rupke, Blecke and Renfrow (2006) said that therapy for depression can bring about change in a person, turn dislike for material to like as well as ensuring joy and peace.
METHODOLOGY

The study was a true experimental research and used the pretest-posttest control group design. The reason for using pretest-posttest design was that it helped evaluate the gain scores of the experimental and control groups.

There was random assignment of samples into experimental and control groups:

<table>
<thead>
<tr>
<th>Groups</th>
<th>Pretest Treatment</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>O₁</td>
<td>X</td>
</tr>
<tr>
<td>Control</td>
<td>O₃</td>
<td>-</td>
</tr>
</tbody>
</table>

O₁ = Pretest for Experimental Group, X = Treatment
O₂ = Posttest for Experimental Group, O₃ = Pretest for Control Group
- = Absence of Treatment and O₄ = Posttest for Control Group

The population consisted of all the 49 students with hearing impairment in senior secondary school 1 in Jos metropolis. Plateau State School for the Deaf Bassa, was purposively selected for the study. The school alone had forty-six (46) SSS 1 students; this size informed the choice of the school for this study. The school had a better and more accurate representation of the students in the Metropolis, it has the largest target population for the study.

20 students with hearing impairment were gotten out of the 46 students from the selected school. This sample of 20 students was randomly assigned to experimental and control groups such that each group had ten (10) participants. The researcher used audiological investigation on the 46 SSS 1 students with hearing impairment and selected those with loss within 40dB – 90dB.

The instrument used in this research for data collection at pre and posttests was: Behaviour of Usage of Hearing Aids Scale (BUHAS).

The instrument used to collect data was given to two professionals with Ph.D in the related fields (Measurement and Evaluation, and Special Education and Rehabilitation Sciences) for validation. It was judged for its comprehensiveness, adequacy and relevance by the experts. The validity index of the instrument was generated to be 0.816.

The Cronbach’s alpha reliability method was used to ascertain the suitability of the research instrument. This was to estimate internal consistency. It was the average split-half correlation based on all possible division of an investigation into two parts. Cronbach’s alpha is defined by the formula:

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

Where \( \alpha = \text{Cronbach’s alpha} \),
\( K = \text{Number of items, and} \)
\( S^2 = \text{Variance} \)
The reliability for BUHAS using Cronbach’s Alpha coefficient index was 0.953.

In screening for sample, Otoscopy helped in determining samples with clean auditory canal. The audiometer helped in getting samples with 40dB – 60dB – 90dB hearing losses. Hearing aids helped ensure that fitting was done on the right samples.

The experimental and control groups were subjected to a pretest on BUHAS to collect the respondents’ responses (data) before the experimental group was exposed to treatment (IPT). BUHAS was administered on one on one basis to the respondents. Interpersonal psychotherapy programme used for treatment during the experiment.

After the administration of the pre-test, the treatment was carried out with the experimental group. It consisted of tips, play-lets and discussions. The treatment was carried out over a period of ten weeks meant for enhancing and improving behaviour towards hearing aids usage, 80% and 20% of the sessions were individualized and group therapy respectively.

The Interpersonal Psychotherapy (IPT) consists of social-psychology tips, for example, advice that will do away with wrong behaviours such as “refusal to wear hearing aids for fear of stigmatization”, wrong teachings and behaviours such as “hearing aid brings humiliation and embarrassment and so it should remain in the pocket”. IPT was also a treatment programme for counselling and rehabilitation management which consists of play-lets and plenary sessions.

Those in the control group were engaged meaningfully in other learning activities for the period the experimental group underwent treatment. After the treatment which lasted for ten weeks, posttest on Behaviour of Usage of Hearing Aids Scale (BUHAS) was administered to both the experimental and control groups. The scale was a five points Likert Scale rated: Strongly Agree (SA: 5 points), Agree (A: 4 points), Undecided (U: 3 points), Disagree (D: 2 points) and Strongly Disagree (SD: 1 point). Where an item is negative, the aggregating is in the reverse: Strongly Agree (SA: 1 point), Agree (A: 2 points), Undecided (U: 3 points), Disagree (D: 4 points) and Strongly Disagree (SD: 5 points).

The hypothesis was tested at P < 0.05 level of significance.

\[ H_0: H_1 = H_n \quad \text{where} \quad n = 1 \]

**FINDINGS**

**Research Question One:** What is the level of behaviour towards the use of hearing aids amongst students with hearing impairment after exposure to interpersonal psychotherapy?
Table 1: Level of Behaviour Towards the Use of Hearing Aids Among Students with Hearing Impairment After Exposure to Interpersonal Psychotherapy

<table>
<thead>
<tr>
<th>Test</th>
<th>Behaviour of Experimental Group</th>
<th>Behaviour of Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Negative</td>
<td>Positive</td>
</tr>
<tr>
<td>Pretest</td>
<td>9(90.00)</td>
<td>1(10.00)</td>
</tr>
<tr>
<td>Posttest</td>
<td>0</td>
<td>10 (100.00)</td>
</tr>
</tbody>
</table>

Figure 1: Level of behaviour of students with hearing impairment towards hearing aids usage

Table 1 and Figure 1 revealed the level of behaviour towards the use of hearing aids among students with hearing impairment. Before intervention, both experimental and control groups had high negative levels (90.00% and 100.00% levels respectively) towards the use of hearing aids. After treatment, the experimental group showed a high level of positive behaviour (100.00%) towards the use of hearing aids.

**Hypothesis One:** There is no significant mean score difference between students with hearing impairment in the experimental and control groups on behaviour towards the use of hearing aids after intervention.
Table 2: ANCOVA of Behaviour Responses Mean Scores Difference Between Students with Hearing Impairment in The Experimental and Control Groups After Intervention

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>DfMean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>3678.275</td>
<td>3 1226.092</td>
<td>13.022</td>
<td>.000</td>
<td>.520</td>
</tr>
<tr>
<td>Intercept</td>
<td>42315.025</td>
<td>1 423150.25</td>
<td>449.403</td>
<td>.000</td>
<td>.926</td>
</tr>
<tr>
<td>Exp_Control</td>
<td>1177.225</td>
<td>1 1177.255</td>
<td>12.503</td>
<td>.001</td>
<td>.258</td>
</tr>
<tr>
<td>Pre_Post Test</td>
<td>1946.025</td>
<td>1 1946.025</td>
<td>20.668</td>
<td>.000</td>
<td>.365</td>
</tr>
<tr>
<td>Exp_Control</td>
<td>555.025</td>
<td>1 555.025</td>
<td>5.895</td>
<td>.020</td>
<td>.141</td>
</tr>
<tr>
<td>Pre_Post Test</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td>3389.700</td>
<td>36 94.158</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>49383.000</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>7067.975</td>
<td>39</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Table 2 Analysis of Covariance (ANCOVA) result of behaviour responses shows that difference exist between experimental and control groups, with calculated F-value of 12.503 and p-value of 0.001. Since the p-value was less than 0.05, the null hypothesis was rejected and alternative hypothesis was accepted.

Table 3: Adjusted Mean of Behaviour Towards the Use of Hearing Aids Among Students with Hearing Impairment

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>Adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Group</td>
<td>16.40</td>
<td></td>
</tr>
<tr>
<td>Control Group</td>
<td>34.70</td>
<td></td>
</tr>
</tbody>
</table>

Table 3 showed the adjusted mean of behaviour towards the use of hearing aids among students with hearing impairment. Experimental group had 16.40 adjusted mean while control group had 34.70. This showed that there was a significant adjusted mean difference of behaviour towards hearing aids usage of students with hearing impairment, between the experimental and control groups after exposure to interpersonal psychotherapy. This means the treatment was effective in improving behaviour towards hearing aids usage. The experimental group had a lower score on behaviour when compared to that of the control group; this is because the items on the questionnaire (BUHAS) directed to address behaviour are in the negative forms. Therefore, lower score means improved behaviour.
Figure 2: Behaviour towards the use of hearing aids among students with hearing impairment

Figure 2 showed the estimated marginal means of behaviour (direction of behaviour) of experimental and control groups towards the use of hearing aids before and after intervention. At pretest, both experimental and control groups had estimated marginal means of 16.50 and 35.00 respectively, but after intervention the experimental and control groups had estimated marginal means of 37.00 and 43.00 respectively. This means the treatment was effective in improving the behaviour towards hearing aids usage.

DISCUSSION

This study was conducted to investigate the effects of interpersonal psychotherapy on attitude towards use of hearing aids among students with hearing impairment in Jos Metropolis with the aim of changing the negative attitude of students with hearing impairment towards the use of hearing aids. The purpose was therefore, to help students with hearing impairment to develop positive attitude towards hearing aids usage so as to improve or better their mode of communication at school and in the society at large.

The generated data from this study was analysed. The simple frequency count, mean score, percentage and bars were used to answer the research question while mean significant difference for data, Analysis of Covariance (ANCOVA) was used to test hypothesis at 0.05 level of significance.
Results of the findings of research question 1 and hypothesis 1 revealed that after IPT, the experimental group had a high level of positive behaviour towards hearing aids usage. ANCOVA of hypothesis 1 revealed that majority of the students in the experimental group had high level of positive behaviour towards the use of hearing aids. Okwudire (2012) affirmed that behaviour can be changed through training. This result reinforces Festinger’s theory of change which is discouraging the foundation of illogical behaviour towards hearing aids usage. The earlier behaviour problems are detected and managed through interventions, the better for the students in question and other students around.

CONCLUSION

No doubt, IPT is a tool that can change the behaviour of students with hearing impairment (SWHI) towards hearing aids usage. The influence of IPT on behaviour of SWHI was that those who wore their hearing aids for 10 hours or more per day, ended with ‘positive high level of behaviour towards hearing aids usage’. This harmonizes McGuire’s Hearing Centres (2018) position that aberrant behaviours in many SWHI are modified and improved by counselling or therapy.

RECOMMENDATIONS

Educational audiologists, special educators/rehabilitation scientists and otolaryngologists should constantly conduct seminars, workshops and symposia for public awareness amongst SWHI, their parents and relevant government agencies, to encourage them on the need for proper hearing aids usage and the positive influence of IPT on behaviours of SWHI.

Interpersonal psychotherapy technique should be used by relevant professionals such as special educationists, audiologists, rehabilitation scientists and the like, to inculcate positive behaviours as well as change negative behaviours of students with hearing impairment in schools and the society at large.

Government should make funds available for the acquisition of hearing aids, accessories and for remunerations of professionals such as educational audiologists, rehabilitation scientists, hearing aids care givers and the like, to encourage such specialists to do their best while working with SWHI and stakeholders in the areas of IPT, hearing aids and behaviours of SWHI.

REFERENCES


