

Efficacy of Cognitive Therapy on the Management of Psychological Distress among Adolescents with Hearing Impairment in Oyo State

Samuel Olufemi Adeniyi¹, Olubukola A. Olufemi-Adeniyi²
and Abiola Wasiu Raheem³

¹Department of Educational Foundations, University of Lagos, Nigeria

²Department of Special Education, University of Ibadan, Nigeria

³Department of Adults Education, University of Ibadan, Nigeria

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CORRESPONDING AUTHOR:

Samuel Olufemi Adeniyi
soadeniyi@unilag.edu.ng

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ABSTRACT:

This study investigated the efficacy of Cognitive Therapy (CT) on the management of Psychological Distress (PD) among adolescents with hearing impairment in Oyo State. The pretest-posttest control group, quasi experimental research design was employed. A total of 53 adolescents with hearing impairment from three integrated secondary schools in two senatorial districts of Oyo State were purposively selected for the study. Kesler Psychological Distress Scale with the index score of 19 and above was the screening tool used to determine the adolescents with PD. Participants were randomly assigned to CT (31) and control (22) groups. The treatment lasted 10 weeks. Clinical Outcomes in Routine Evaluation ($r=0.71$), Rosenberg Self-esteem, Rating ($r=0.58$) and Kesler Psychological Distress ($r=0.63$) scales were used for data collection. Data collected were analysed using Analysis of Covariance and Bonferroni post-hoc test at 0.05 level of significance. Results showed that participants in the CT group managed their PD better than those in the control group. Participants with high self-esteem benefitted from the treatment than those with moderate and low self-esteem. Based on these findings, special educators, counselling and clinical psychologists and social workers are advised to use the therapy to manage psychological distress among adolescents with hearing impairment.

Keywords: Cognitive therapy; Psychological distress; Adolescents; Hearing impairment

INTRODUCTION

Hearing is one of the essential tools for language development, skills acquisition and social interaction. It determines the ability to relate, communicate effectively and subdue the pressure in one's environment. However, there are situations such as congenital defect, injury, disease and certain medications that could result in hearing impairment. The individuals with hearing impairment experience alteration to smooth process of information in form of acoustic stimuli traceable to dysfunctional hearing system. This may lead to communication breakdown and social isolation that could result into psychological distress.

Psychological distress represents a dimension of mental ill-health that has neither uniform definitions nor measures. Compared to mental disorder, which refers to categorical clinical diagnoses, psychological distress refers to psychopathology that is less specific and can be measured in a simple and cost effective way in the general population. It is defined as a non-specific syndrome that covers constructs such as depression, anxiety, cognitive problems, irritability, anger and obsession – compulsion (Korkeilla, 2000). However, literature favours three dimensions of psychological distress – depression, insomnia and stress. A larger number of psychological, biological and physical symptoms have been included under the term depression by various authors (McDowell, 2006; Judd & Akiskal, 2000; Bjerkeset et al., 2008) and these symptoms occur with considerable frequency in all psychiatric and mental patients. The main features of depression include cognitive distortion, negative view, inability to experience pleasure, irritable mood, anxiety level or increased but ineffective activity, fatigue, disturbance of sleep, aches and pain, loss of appetite or over-eating, loss of interest in sex, deterioration in family relationship, withdrawal from peer relationship and poor school performance (Carr, 1999). However, these features may be linked by assuming that the depressed person has usually suffered a loss of some sort. It may be loss of an important relationship, loss of some valued attribute (Kovacs, 1997; Harington, 1993).

Insomnia represents actual inability to sleep one's usual amount of time – a condition characterised by any combination of difficulty with falling asleep, staying sleep, intermittent wakefulness and early morning awakenings (Segen, 2006). Episodes may be transient, short-time (lasting 2-3 weeks) or chronic. Ohayon (2002) identified self-induced and secondary factors that can initiate or maintain insomnia symptoms. Self-induced

factor include lifestyle-related factors such as shift work, irregular sleep-wake schedule, stress and environmental factors. Self-induced factors are also related to psychoactive substances (e.g., alcohol, illicit drugs). Secondary factors associated with insomnia are related to mental disorder (e.g., depressive disorders), medical conditions (e.g. headache, infections), breathing disorder during sleep and other sleep disorders (e.g., restless, leg syndrome). Stress represents a psychological and physiological response to a situation that threatens and makes some kind of adjustment difficult or impossible. It is a complex construct that can be viewed from several dimensions which embody stressor domain, stress duration, severity, exposure, experience, responses and outcomes (Matthew & Gallo, 2011). However, stress may be work-related, related traumatic events, different life events, traumatic events and daily hassles. People perceive and are therefore affected by stress in different ways. In some cases it may be considered to result in positive outcomes, while in other cases it can lead to negative outcomes (Fakokunde et al., 2014). In this study, psychological distress refers to self-reported depression.

Individuals with hearing impairment, like any other persons, experience psychological distress. The problem of communication and social interaction associated with hearing impairment have significant impact on the cognitive and social functioning (Adeniyi & Kuku, 2016). According to Sheridan (2001), adolescents with hearing impairment were found to be more restless, distractible, irritable, hyperactive, aggressive, lacking perseverance, crying over minor annoyance, shying and suspicious of others because of their auditory deprivation. The condition is often compounded and varied with the degree of severity of hearing impairment as well as the onset of hearing loss. Individuals who acquired their hearing impairment in the adulthood experience more psychological distress than those who acquired their impairment in the early childhood (Munoz-Bacl & Ruizi, 2000). On the other hand, congenital impairment is more of a linguistic problem because these individuals with hearing impairment most often have not learnt any spoken language properly before the hearing impairment. Hearing loss at adulthood significantly changes the lives of such individuals. They have to learn to adjust to and adopt new communication strategies and lifestyle. They have to establish a new identity and recreate their social relationships. Also, those with profound hearing loss cannot conduct a conversation where hearing and speaking are required channels of communication. They need cues such as face-to-face communication with

constant eye contact, lip reading and understanding of body language. Unfortunately, these are rarely available in encounters with hearing individuals and consequently, individuals with hearing impairment are unlikely to pick a lot of information, even with the use of hearing aids (Adeniyi, 2012). Repeated experience of ineffective communication lead to frustration and feeling of deficiency that could diminish self-esteem of individual with hearing impairment (Jambor & Elliott, 2005) and thereby result in psychological distress (Way & Robinson, 2003). On the other hand, those with mild or moderate hearing loss are often caught in the middle since they do not define themselves as deaf. Yet they cannot fully function as hearing in a situation that relies on hearing and speech. This may lead to frustration and distressed self-esteem. Specifically, studies have confirmed that self-esteem (Amos et al., 2016) and severity of hearing loss (Meyer & Kashubeck-West, 2013) significantly predict psychological distress among adolescents with hearing impairment.

Having presented the myriad of potential risk factors for exhibiting the symptoms of psychological distress among adolescents with hearing impairment, there is the need to evolve methods that could help these adolescents exhibit more effective interpersonal, cognitive and emotional behaviours that could lead to improved social and cognitive functioning. For the purpose of this study, cognitive therapy was employed because the technique has been gaining credence in recent years.

Cognitive therapy stems from the cognitive theory of depression, proposed by Beck (1967). It teaches clients adaptive metacognition – how to think about their thinking so that they can correct faulty cognitive processing and develop assumptions that allow them to cope. While cognitive therapy may initially address symptom relief, its ultimate goal is to remove systematic biases in how clients think. In addition, cognitive therapy aims to impart behavioural skills relevant to clients' problems, for example, assertion skills for shy people. Specifically, the therapeutic goals include teaching the clients to:

1. monitor their negative automatic thought;
2. recognise the connections between cognition, affect and behavior;
3. examine and reality-test the evidence for and against distorted automatic thoughts;
4. substitute more realistic interpretations for biased cognitions; and
5. learn to identify and alter the beliefs that predispose them to distort their experiences (Beck and Weishaar, 2000).

During the therapy process, clients undergo an intake protocol consisting of a clinical interview and psychological test. The clinical interview provides a thorough history of the background factors contributing to the client's distress. The interview also assesses the current level of functioning, prominent symptoms and expectations for therapy. The initial interview has many purposes which include initiating relationship, providing a rationale for cognitive therapy, producing symptom relief, and eliciting important information. During the initial interview, the therapist starts to define the problems, using both functional and cognitive analyses. The functional analysis seeks to answer questions such as: 'What are the component parts of the problem?', 'How is it manifested?', 'In what situation does it occur?', 'What is its frequency, intensity and duration?', and 'What are its consequences?'

The cognitive analysis identifies the client's thoughts and images when emotion is triggered and the extent to which the client feels in control of thoughts and images. From the beginning, therapist trains client to monitor their feelings, thoughts and behavior and to cognise the connections between them. Homework is a feature throughout cognitive therapy. While the early stages of therapy may focus on symptom removal, middle and later stages are more likely to emphasise changing client's pattern of thinking (N-Jones, 2001).

More importantly, both cognitive and behavioural interventions are used in cognitive therapy. The interventions selected should depend on such factors as the nature of the client's problem, the therapeutic goals and how well they are functioning. The cognitive interventions are used to replace client's distorted automatic thoughts and beliefs with more realistic ways of processing information. The interventions include eliciting and identifying automatic thoughts (e.g. questioning, focusing on imagery, self-monitoring of thought, encouraging clients to engage in feared activities), reality-testing and correcting automatic thoughts (e.g. conducting Socratic dialogues, identifying cognitive distortion, decatastrophising, reattribution, decentering, forming rational responses) and identifying and modifying underlying beliefs (e.g., hypothesis testing, refashioning beliefs). Behavioural interventions in cognitive therapy are used to: lay foundation for later cognitive work; assist clients in reality testing their automatic thoughts and beliefs; assist client engage in feared activities; and train clients in specific behavioural skills. The interventions include activity scheduling, rehearsing behavior and role-playing, assignment graded tasks and assigning homework (N-Jones, 2001).

Studies have demonstrated that cognitive therapy is feasible intervention for the management of psychological distress among adolescents (David-Ferdon & Kaslow, 2008; Raheem, 2016; Pirani et al., 2017; Gharashi & Mohebi, 2018). However, clear evidence of their efficiency among adolescents with hearing impairment has not been fully established in Nigeria. This study, therefore, investigated the efficacy of cognitive therapy on management of psychological distress among adolescents with hearing impairment in Oyo State, Nigeria.

The following hypotheses were tested in the study at 0.05 level of significance.

- HO₁: There is no significant main effect of treatment on participants' management of psychological distress.
- HO₂: There is no significant interaction effect of (a) onset of hearing and (b) self-esteem on participants' management of psychological distress.
- HO₃: There is no significant interaction effect of treatment, onset of hearing loss and self-esteem on participants' management of psychological distress.

MATERIAL AND METHODS

The study was conducted in three integrated schools from two senatorial districts of Oyo State. These schools were chosen because they were considered adequate to provide opportunity for generalisation of the research findings. The pretest-posttest control group quasi-experimental design was adopted for the study.

The population for this study consisted of adolescents with hearing impairment. Purposive sampling technique was used to select 53 adolescents with hearing impairment from the three integrated secondary schools purposively selected from the two senatorial districts. The Kessler Psychological Distress scale with index scores of 19 and above was the screening tool used to determine distressed adolescents with hearing impairment. The adolescents were in the 12-21 age range. The participants were randomly assigned to cognitive therapy (31) and control (22) groups. Three research instruments: Kessler Psychological Distress Scale, Clinical Outcomes in Routine Evaluation and Rosenberg Self-esteem Rating Scale were used in this study. Kessler Psychological Distress Scale (KIO) (Kessler et al., 2003) is a 10-item unidimensional scale specifically designed to assess psychological distress in population survey. Specifically, the scale evaluates how often respondents exhibit depressive symptoms (e.g. nervousness, sadness,

restlessness, hopelessness, worthlessness). Each item is scaled from 0 (none of the time) to 4 (all of the time). Clinical Routine Evaluation (Core-10) was developed by Barkham et al. (2010) to assess how often over the past week the respondents experienced anxiety, nervousness, panic, among others. Each item is scaled from 0 (Not at all) to 4 (All of the time). Rosenberg Self-Esteem Rating Scale was developed by Rosenberg (1965). It consists of ten items to assess individuals level of self-esteem. Samples of the items on the inventory include: "I feel that I have a number of good qualities"; "I feel I am a person of worth at least on an equal plane with others". The scale is constructed on a four likert format of 'Strongly Agreed' (SA=4), 'Agreed' (A=3), 'Disagree' (D=2) and 'Strongly Disagree' (SD=1). However, the reliability of the Kessler Psychological Distress Scale, Clinical Routine Evaluation and Rosenberg Self-Esteem Rating Scale were established through test-retest method and the fresh internal consistency estimates yielded a mean coefficient alpha of 0.63, 0.71 and 0.58 respectively.

The procedure for data collection was carried out in three phases – pre-treatment, treatment and post-treatment. During the pre-treatment, the major activity was the screening of the adolescents for study eligibility. In the treatment phase, the major activities included administering the Core 20 to the two groups for the purpose of obtaining pre-test scores and the Rosenberg Self-esteem Rating Scale to classify the participants. The participants in the experimental group were then subjected to ten 60 minutes-weekly sessions of cognitive therapy, while those in control group were managed with distress education counselling for ethical reasons. The cognitive therapy treatment protocol was adapted from David-Ferdon & Kaslow's (2008) cognitive behavior therapy which stems from cognitive theory of depression proposed by Beck (1967). The cognitive techniques in the treatment protocol included refashioning beliefs, forming rational response, decatastrophising and redefining. The behavioural techniques included grade task assignment, initiating and maintaining peer interaction and recognising cue. The guide for control group consists of only distress education counselling. It included the definition, causes and symptoms of psychological distress. It lacks any effective skills that could be employed to manage distress. Post-treatment evaluation phase involved the administration of Core-10 for the purpose of collecting the posttest scores from the two groups. The data obtained were analysed using Analysis of Covariance and Duncan post-hoc test at 0.05 level of significance.

RESULTS

Hypothesis One: There is no significant main effect of treatment on participants’ management of psychological distress.

The result from Table 1 revealed that there was a significant main effect of treatment (cognitive therapy) on

management of psychological distress among adolescents with hearing impairment ($F_{(1,50)}=268.366$; $p < 0.05$; partial $\eta^2=0.84$). Therefore, the null hypothesis is rejected. However, to determine the magnitude of the mean scores of the participants’ distress management in each of the treatment groups, Bonferrom post-hoc analysis was calculated and presented in Table 2.

Table 1. Analysis of Covariance (ANCOVA) Summary of Distress Management Score by Treatment

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1152.387 ^a	2	576.194	136.949	0.000	0.846
Intercept	258.226	1	258.226	61.375	0.000	0.551
Core10_Pre	0.002	1	0.002	0.001	0.982	0.000
Treatment	1116.488	1	1116.488	265.366	0.000	0.841
Error	210.367	50	4.207			
Total	6967.000	53				
Corrected Total	1362.755	52				

Table 2. Estimated Marginal Means for Post-psychological Distress by Treatment and Control Groups

Treatment	Mean	Std.Error
Cognitive Therapy (CGT)	6.354	0.371
Conventional Therapy (CVT)	15.820	0.441

The results from Table 2 showed that, after controlling for the effect of pre-distress management score, the participants exposed to cognitive therapy (CT) had mean score ($\bar{x}=6.354$) compared to their counterparts who were exposed to psychological distress education which is the control group ($\bar{x}=15.820$). This implies that the CT was effective in the participants’ management of psychological distress.

- Hypothesis Two:** There is no significant main effect of:
- (a) onset of hearing loss, and
 - (b) self-esteem on participants’ management of psychological distress.

The results from table 3 revealed that there was no significant main effect of onset of hearing loss ($F_{(1,40)}=0.563$; $p > 0.05$, partial $\eta^2=0.012$) on participants’ management of psychological distress. This means that onset of hearing loss had no main effect on the management of psychological distress. Thus, the hypothesis 2(a) is accepted.

However, there was a significant main effect of self-esteem ($F_{(2,40)}=41.700$; $p < 0.05$, partial $\eta^2=0.645$) on participants’ management of psychological distress. Thus, the

hypothesis 2(b) is rejected which implies that self-esteem had a main effect on the participants’ management of psychological distress. To ascertain the direction and determine the magnitude of the mean scores of the participants’ (with high, moderate and low self-esteem) distress management in the treatment group, Bonferroni post-hoc test analysis was calculated and presented in Table 4.

The result from Table 4 showed the estimated marginal means which explains that participants with high self-esteem ($\bar{x}= 6.536$) had the lowest adjusted post-psychological distress mean score, compared to their counterparts with moderate ($\bar{x}= 7.794$) and low ($\bar{x}= 16.119$) self-esteem.

Hypothesis Three: There is no significant interaction effect of treatment, onset of hearing loss and self-esteem on participants’ management of psychological distress.

The result from Table 3 revealed that there was no significant effect of treatment, onset of hearing loss and self-esteem on participants’ management of psychological distress ($F_{(2,40)}=1.226$; $p < 0.05$, partial $\eta^2=0.051$). By implication, hypothesis three was accepted.

Table 3. Summary of Analysis of Covariance (ANCOVA) of Post-psychological Distress by Onset of Hearing Loss and Self-esteem

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	957.567	6	159.594	18.118	0.000	0.703
Intercept	143.569	1	143.569	16.299	0.000	0.262
Core10_Pre	5.820	1	5.820	0.661	0.420	0.014
Onset of Loss	4.956	1	4.956	0.563	0.457	0.012
Self Esteem	734.615	2	367.308	41.700	0.000	0.645
Onset*Esteem	21.605	2	10.803	1.226	0.303	0.051
Error	405.188	46	8.808			
Total	6967.000	53				
Corrected Total	1362.755	52				

Table 4. Estimated Marginal Means for Post-psychological Distress by Low Self-esteem, Moderate Self-esteem and High Self-esteem.

Self-esteem	Mean	Std.Error
Low Self-esteem	16.119	0.847
Moderate Self-esteem	7.794	0.775
High Self-esteem	6.536	0.705

DISCUSSION

The result of the study revealed a significant difference among the experimental and control groups on the management of psychological distress. This result did not provide support for Hypothesis One, suggesting a non-significant main effect and hence, was rejected. Nonetheless, the data collected appear to provide evidence in favour of the experimental group as being superior over their counterparts in the control group in the management of psychological distress. Specifically, the intervention was found to have contributed significantly to the management of psychological distress among the participants. This results is consistent with the growing body of research that had used psychotherapeutic techniques such as cognitive therapy for the management of psychological distress among adolescents with hearing impairment (Gharashi & MOheb, 2018; Suarez, 2000; Pirami et al., 2017; Williams et al., 2015). The possible reasons for the findings could be that the cognitive therapy is very informative and rich in techniques capable of changing the participants' thought, feelings and behaviours. However, the poor management of distress among the participants in the control group may be due to the fact that they sim-

ply have not learned to employ the effective tactics that can be used to manage psychological distress.

The result obtained and presented in Table 3 supported the Hypothesis 2(a) because the result was found to be insignificant, hence, the hypothesis was accepted. Furthermore, both pre-lingual and post-lingual adolescents with hearing impairment equally benefitted from the treatment protocol. It could be reasonably argued that onset of hearing impairment did not contribute significantly to the variation in the participants management of psychological distress. This result is not consistent with those of Szymanski et al. (2008) and Meyer & Kashubeck-West (2013), and De & Biji (2002). They reported that individuals with hearing impairment may be challenged to a point that adjustment to environmental stressors may not be possible. Whereas, individuals with pre-lingual and post-lingual hearing impairment learn to adjust to social situations and learn cognitive emotional strategies to communicate with interact in all situation. This degree of adjustment can affect social relationships. Self-worth and psychological wellbeing. However, the result obtained for Hypothesis 2(b) was found to be significant, hence the hypothesis was rejected. The data analysis also showed that hearing-impaired adolescents with high

self-esteem benefitted from the treatment than those with moderate and low self-esteem, while those moderate self-esteem benefitted from the treatment than those with low self-esteem. This means that the higher the self-esteem of adolescent with hearing impairment, the higher the effectiveness of the treatment protocol. This finding is in agreement with the presentation of Jambor & Elliot (2005), and Percy-Smith et al. (2008). This shows that self-esteem is an important psychological construct that has a pervasive and powerful impact on human cognition, motivation, emotion, behavior and overall psychological wellbeing.

The finding of this study support Hypothesis 3 that there is no significant interaction effect of treatment, onset of hearing loss and self-esteem on participants' management of psychological distress. This result suggested that the effect of treatment did not depend on the other two factors (onset of hearing loss and self-esteem) to make a difference for both onset of hearing loss and self-esteem characteristics of the participants.

RECOMMENDATIONS

Based on the finding of this study, it is recommended that special educators, social workers, counselling psychologists and professional caregivers could use the cognitive therapy treatment protocol to manage psychologi-

cal distress among adolescents with hearing impairment. The therapy could also be recommended for both types of onset of hearing loss (pre-lingual and post-lingual) and the three levels of self-esteem (high, moderate and low).

CONCLUSION

From the results of the present study, it is evident that cognitive therapy is effective for the management of psychological distress among adolescents with hearing impairment in Oyo State. And since the 3-way interaction effect of treatment, onset of hearing loss and self-esteem was not significant, it suggests the suitability of the therapy for both types of onset of hearing loss (pre-lingual and post-lingual) and levels of self-esteem (high, moderate and low).

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