



EFFECTIVENESS OF COGNITIVE-BEHAVIORAL THERAPY ON STIGMA, ANXIETY, AND DEPRESSION AMONG CAREGIVERS OF INDIVIDUALS WITH INTELLECTUAL DISABILITY AT A NEUROPSYCHIATRIC HOSPITAL IN BENIN CITY, NIGERIA.

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ABSTRACT

This study examined the efficacy of Cognitive Behavioral Therapy (CBT) in reducing associative stigma and psychological distress among primary caregivers of individuals with intellectual disability at Federal Neuro-Psychiatric Hospital in Benin City, Nigeria, while statistically controlling for baseline differences. Using a pretest-posttest design, 66 caregivers (47 females, 19 males; $M = 46.2$, $SD = 10.57$) received a structured CBT intervention. Data were collected using the Associative Stigma Scale, Beck Anxiety Inventory, and Beck Depression Inventory. Post-test scores served as dependent variables, while corresponding pre-test scores were entered as covariates. ANCOVA was used for data analysis, with effect sizes reported as partial η^2 . After adjusting for baseline scores, ANCOVA revealed a statistically significant effect of CBT on associative stigma, $F(1, 20) = 2.96$, $p = .008$, partial $\eta^2 = .31$, with mean scores reducing from pre-test ($M = 10.73$) to post-test ($M = 5.09$). A significant adjusted treatment effect was also observed for anxiety disorder, $F(1, 20) = 16.22$, $p < .001$, partial $\eta^2 = .56$, with mean anxiety scores decreasing from pre-test ($M = 32.18$) to post-test ($M = 24.32$). Similarly, CBT significantly reduced depressive symptoms after baseline adjustment, $F(1, 20) = 11.56$, $p < .001$, partial $\eta^2 = .48$, with mean depression scores declining from pre-test ($M = 19.14$) to post-test ($M = 14.59$). CBT showed moderate to large adjusted effects on associative stigma, anxiety, and depression.

Keywords: Cognitive Behavioral Therapy; Associative Stigma; Anxiety; Depression; Caregivers; Intellectual Disability; Nigeria.

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INTRODUCTION

Disability arises from interactions between a person's attributes and their physical environment, causing limitations in action and participation (World Health Organization, 2023). The World Health Organization (2023) reports that 16% of people globally live with significant disability, facing a life expectancy 20 years lower than peers, double the risk of chronic illness, and higher rates of poverty, stigma, lack of education and employment, and poor healthcare access. Intellectual disability (ID) involves major limitations in mental functioning and adaptive behavior beginning before age 18, distinct from mental illness or physical disability (American Psychiatric Association, 2022). In Nigeria, ID prevalence is high, yet families receive little government support, and individuals with ID often experience abuse, exclusion, and stigma (Nigerian Health Watch, 2019; Sango et al., 2022). Caring for a person with ID is demanding. Primary caregivers, usually relatives, provide self-care assistance, medication management, emotional support, and healthcare navigation (Dike & Sydney-Agbor, 2023). Challenges include perinatal complications, sensory and motor impairments, social skill deficits, safety concerns, and discrimination, contributing

to caregiver stress, anxiety, and depression, reducing their quality of life and wellbeing (Dike et al., 2017; Choi, Patterson, & Chinho, 2024). Many patients receive most care at home, and caregivers often neglect their own health, struggle to balance work and family, and endure behavioral difficulties that trigger anger, guilt, shame, fear, sadness, and frustration (Dike et al., 2017). Research shows these caregivers suffer psychological distress including depression, insomnia, anxiety, somatization, stigma, paranoia, and obsessive behavior, with inadequate professional support (Dike et al., 2017; Dike & Sydney-Agbor, 2023). Caregivers are also vulnerable to associative-stigma, where stigma extends to those associated with a stigmatized person, leading to shame, guilt, social withdrawal, anxiety, and depression (Dike et al., 2023). In Nigeria, caregivers often conceal relatives' conditions, and this internalized stigma worsens anxiety and depression (Dike et al., 2017; Dike et al., 2023). Anxiety disorders, including generalized anxiety disorder (GAD) with persistent uncontrollable worry, affect about 4% of the global population (Javaid et al., 2023; World Health Organization, 2023), with physical symptoms like palpitations, sweating, and

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weakness; untreated chronic anxiety may lead to cardiovascular issues, dementia, and hypertension (Sartori & Singewald, 2019). Depression involves persistent sadness, hopelessness, loss of interest, and impaired functioning, contributing heavily to suicide risk (American Psychological Association, 2013; Santomauro et al., 2021; World Health Organization, 2023). Cognitive Behavioral Therapy (CBT) modifies dysfunctional thoughts and behaviors, addressing caregiving challenges and internalized stigma (Beck, 1967; Ellis, 1956; Curtiss et al., 2021). Despite global recognition of CBT's efficacy, its application among Nigerian caregivers in low-resource settings remains underexplored. Given the limited mental health resources and pervasive societal stigma that create a cycle of stress compromising both caregiver and patient wellbeing (Dike et al., 2017; Dike & Sydney-Agbor, 2023), the goal of this study is to evaluate the efficacy of CBT in reducing anxiety, depression, and associative-stigma among primary caregivers of individuals with intellectual disabilities in Benin, Nigeria.

Literature Review

Cognitive Behavioral Therapy (CBT) is an evidence-based intervention addressing

dysfunctional thoughts and behaviors that contribute to psychological distress (Beck, 1967; Ellis, 1956). Ellis' Rational Emotive Behavior Therapy focuses on modifying irrational core beliefs, while Beck's cognitive triad highlights negative perceptions of self, world, and future that maintain emotional distress. In caregiving contexts, these cognitive distortions emerge from internalized stigma, caregiving burden, and negative experiences with care recipients. CBT interventions typically involve structured phases including assessment, skills acquisition, consolidation, and maintenance (Gatchel & Rollings, 2008). Techniques include psychoeducation, cognitive restructuring, behavioral activation, relaxation training, and stress inoculation.

Associative-stigma, or courtesy stigma, refers to the stigmatization of individuals associated with stigmatized persons, such as caregivers of people with intellectual disabilities (Dike et al., 2017; Inogbo et al., 2017). The self-stigma model explains how public stigma becomes internalized, leading to emotional distress, social withdrawal, anxiety, and depression (Corrigan & Watson, 2002; Link, 1987). Empirical studies confirm that caregivers of individuals with ID frequently experience

Dike, O. G., Uwaoma, N. C., & Ihebom, C. N. (2026). Effectiveness of Cognitive-Behavioral Therapy on Stigma, Anxiety, and Depression among Caregivers of Individuals with Intellectual Disability at a Neuropsychiatric Hospital in Benin City, Nigeria.

internalized associative-stigma, resulting in reduced quality of life (Dike et al., 2017; Dike et al., 2023; Kaggwa et al., 2023). Caregivers may conceal their relatives' conditions to mitigate stigma, a behavior that reflects internalized self-stigma and worsens psychological distress (Dike et al., 2017; Dike & Sydney-Agbor, 2023).

Several studies support CBT's efficacy in reducing stigma and psychological distress. Young (2016) found significant reductions in self-stigma among people with mental illness after 10 CBT sessions in China. Groubert, George, and Glandorf (2017) showed that psychoeducation and exposure-based CBT reduced associative-stigma among psychiatric nursing students. Onyedibe et al. (2020) reported significant reductions in anxiety and depression among Nigerian breast cancer patients after CBT. Are et al. (2021) found large effect sizes (Cohen's $d = 1.3$) for depression reduction among adolescents. A meta-analysis by Bhattacharya et al. (2023) confirmed CBT's efficacy in reducing anxiety and depression across multiple settings. Nozizwe (2024) highlighted CBT's potential in resource-constrained South African contexts, underscoring the relevance of culturally adapted interventions.

Despite global evidence of CBT's efficacy, few studies have evaluated its application among primary caregivers of individuals with ID in Nigeria, where mental health resources are scarce and societal stigma is pervasive. Research has documented high levels of anxiety, depression, and associative-stigma among Nigerian caregivers (Dike et al., 2017; Dike & Sydney-Agbor, 2023), yet tailored interventions remain limited. This study aims to address this gap by evaluating CBT's efficacy in reducing associative-stigma, anxiety, and depression among primary caregivers of individuals with ID in Benin, Nigeria, providing evidence-based guidance for culturally sensitive mental health interventions.

Purpose of the Study

The general purpose of this study is to evaluate the efficacy of CBT in reducing associative-stigma, anxiety, and depression among primary caregivers of individuals with ID in Benin, Nigeria. Specifically, the study aims to:

1. Evaluate the effectiveness of CBT in managing associative-stigma among caregivers.
2. Assess the effectiveness of CBT in treating anxiety disorders among caregivers.

Dike, O. G., Uwaoma, N. C., & Ihebom, C. N. (2026). Effectiveness of Cognitive-Behavioral Therapy on Stigma, Anxiety, and Depression among Caregivers of Individuals with Intellectual Disability at a Neuropsychiatric Hospital in Benin City, Nigeria.

3. Determine the effectiveness of CBT in managing depression among caregivers.

Hypotheses

- H₁₁: After controlling for pretest associative stigma scores, CBT has a

significant effect on post-test associative stigma among primary caregivers.

- H₁₂: After controlling for pretest anxiety scores, CBT has a significant effect on post-test anxiety disorder among primary caregivers.

METHOD

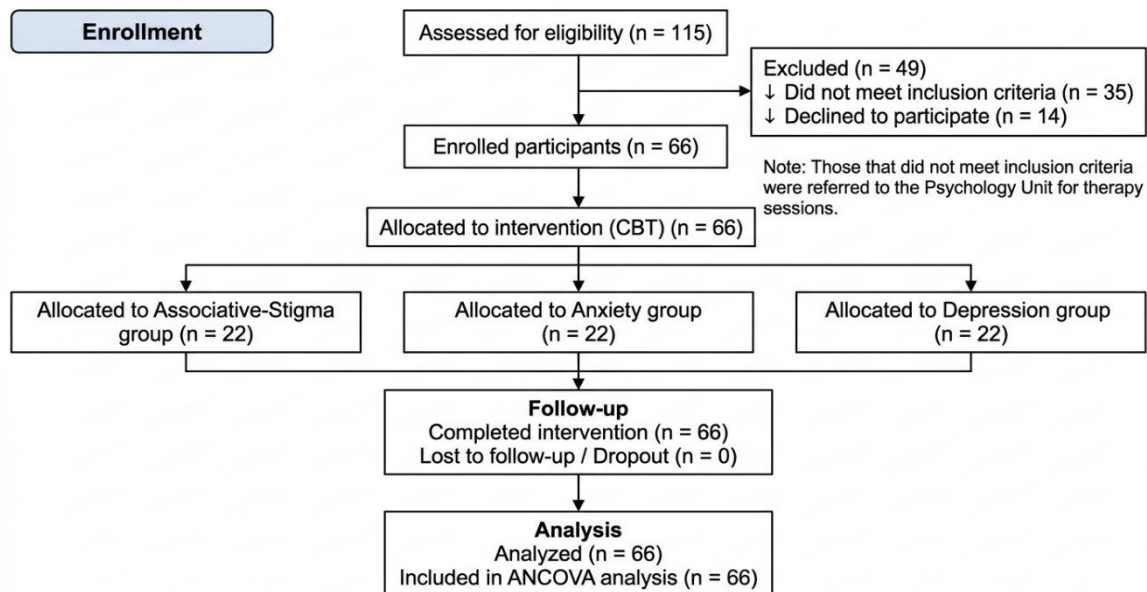
Research Design ~~This study used a correlational research design, which is non-experimental.~~

.....
The study adopted a one-group pretest-posttest quasi-experimental design.

Participants: This research engaged the relatives of the primary caregivers of patients with IDD that attend clinic at Child and Adolescent (C and A) Unit of Federal Neuro-Psychiatric Hospital (FNPH) Uslu Benin-City Edo State. They are known as first-degree relatives. The hospital was selected based on random sampling. The participants totaled 66 persons of 47 females and 19 males, aged 18 to 64 years,

mean age of 46.2, SD of 10.57, for males 11.32 and females 21.75. Primary caregivers were excluded if they could not communicate in English or Pidgin, were outside the age bracket, declined consent, or had wards without an intellectual disability diagnosis or with dual diagnosis. They were diagnosed with anxiety disorder, depression and associative-stigma drawn from the pool of 115 old and new primary caregivers using purposive sampling. They include students, civil and public servants, artisans, pensioners, farmers and self-employed. They were grouped into 3 groups; associative-stigma, anxiety disorder and depression.

Dike, O. G., Uwaoma, N. C., & Ihebom, C. N. (2026). Effectiveness of Cognitive-Behavioral Therapy on Stigma, Anxiety, and Depression among Caregivers of Individuals with Intellectual Disability at a Neuropsychiatric Hospital in Benin City, Nigeria.



Note: Those that did not meet inclusion criteria were referred to the Psychology Unit for therapy sessions.

Instruments:

Three clinical tools were used. The Brief Stigma-by-Association Scale (BSBAS; Boyes, Mason, & Cluver, 2013) assessed associative-stigma. This 10-item scale for African youths uses a 0 (not at all) to 2 (all the time) rating. Total scores of 0 indicate no stigma, 1–9 low stigma, and 10 or above high stigma (Sango & Deveau, 2022). The scale showed high reliability ($\alpha = .78-.87$), with all item-total correlations above .30 (Nunally & Beinstein, 1994).

The Beck Anxiety Inventory (BAI; Beck, 1990) assessed anxiety. This 21-item scale for ages 17 to 80 yields scores of 0–21 (low), 22–35 (moderate), and 36 or above (potential concern). It has Cronbach's alpha

of .92 and test-retest reliability of .75 (Beck, Epstein, Brown, & Steer, 1988). The BAI has shown consistency in Nigerian populations (Ejike & Ijeh, 2012).

The Beck Depression Inventory (BDI; Beck et al., 1961; revised by Beck et al., 1988) assessed depression. This 21-item self-administered or verbal test for ages 13 to 80 takes 5–10 minutes. Scores range from 1–10 (normal), 11–16 (mild mood disorder), 17–20 (borderline clinical depression), 21–30 (moderate), 31–40 (severe), to over 40 (extreme). Internal consistency ranges from .73 to .92 (mean .86; Beck, Steer, & Garbin, 1988). Psychometric evidence supports BDI use in African settings (Adewuya, Ola, & Aloba, 2007; Beck & Steer, 2006).

Dike, O. G., Uwaoma, N. C., & Ihebom, C. N. (2026). Effectiveness of Cognitive-Behavioral Therapy on Stigma, Anxiety, and Depression among Caregivers of Individuals with Intellectual Disability at a Neuropsychiatric Hospital in Benin City, Nigeria.

Procedure

At baseline, all participants completed the socio-demographic questionnaire, BAI, BDI, and BSBAS. Questionnaires were translated into Pidgin using back-translation by hospital staff; the Pidgin version was read aloud to ensure uniform understanding. Pretests were scored, and participants were assigned to groups. There were 22 participants per group, further classified into three subgroups of 11 each at high and moderate levels on each measure. CBT was delivered in 35-45 minute sessions, 6-8 sessions over 10-12 weeks. Extraneous variables were controlled. Participants attended sessions on their wards' clinic days, were treated individually but classified into groups, and did not know each other. Researchers and trained assistants handled test administration, CBT sessions, and supervision. Sessions focused on cognitive restructuring and behavioral activation. The programme followed a manual-guided framework over three months with 5-7 participants daily.

Core Therapy Components

Session 1: Psychoeducation on ID, caregiving stress, stigma, anxiety, depression, and the CBT model

- Session 2: Identification of dysfunctional cognitions related to associative stigma, anxiety, and depression
- Session 3: Cognitive restructuring to challenge maladaptive beliefs
- Session 4: Anxiety management and behavioral activation including relaxation and adaptive activities
- Session 5: Depression-focused cognitive and behavioral skills
- Session 6: Skills consolidation and relapse prevention

Additional sessions were used as needed for reinforcement and problem-solving.

Ethical Considerations

The researchers obtained written approval from the Ethics Review Committee of the Federal Neuro-Psychiatric Hospital, Uselu, Benin City (approval number PH/A.864/VOL.XI/219). Participants provided written informed consent. The study followed the APA Code of Ethics (2002) and Nigerian Association of Clinical Psychologists (2010) guidelines.

Method of Statistical Analysis

Data were analyzed using ANCOVA to evaluate CBT efficacy while controlling for baseline differences. Pretest scores were entered as covariates and posttest scores as

Dike, O. G., Uwaoma, N. C., & Ihebom, C. N. (2026). Effectiveness of Cognitive-Behavioral Therapy on Stigma, Anxiety, and Depression among Caregivers of Individuals with Intellectual Disability at a Neuropsychiatric Hospital in Benin City, Nigeria.

dependent variables. ANCOVA moderate (.06), and large (.14). Statistical assumptions were tested and met. Effect sizes were reported using partial eta squared (η^2), interpreted as small (.01), were performed using SPSS version 28.

RESULTS

Table 1: ANCOVA Results for the Effect of CBT on Associative Stigma (H_{11})

Source	SS	df	MS	F	p	Partial η^2
CBT Intervention	53.21	1	53.21	2.96	.008	.31
Pre-test (Covariate)	41.87	1	41.87	2.33	.035	.21
Error	357.34	62	5.76			
Total	452.42	64				

Note. CBT = Cognitive Behavioral Therapy. ANCOVA adjusted for baseline associative-stigma scores. Partial η^2 indicates effect size.

Table 2: ANCOVA Results for the Effect of CBT on Anxiety (H_{12})

Source	SS	df	MS	F	p	Partial η^2
CBT Intervention	312.48	1	312.48	16.22	<.001	.56
Pre-test (Covariate)	204.32	1	204.32	10.60	.002	.42
Error	1,194.67	62	19.27			
Total	1,711.47	64				

Note. CBT = Cognitive Behavioral Therapy. ANCOVA adjusted for baseline anxiety scores. Partial η^2 indicates effect size.

ANCOVA Results for the Effect of CBT on Depression

Table 3: ANCOVA Results for the Effect of CBT on Depression (H_{13})

Source	SS	df	MS	F	p	Partial η^2
CBT Intervention	214.56	1	214.56	11.56	<.001	.48
Pre-test (Covariate)	132.18	1	132.18	7.12	.010	.36
Error	1,151.74	62	18.57			
Total	1,498.48	64				

Note. CBT = Cognitive Behavioral Therapy. ANCOVA adjusted for baseline depression scores. Partial η^2 indicates effect size.

Effect of CBT on Associative Stigma effect of Cognitive Behavioral Therapy
ANCOVA was conducted to examine the (CBT) on associative stigma while

Dike, O. G., Uwaoma, N. C., & Ihebom, C. N. (2026). Effectiveness of Cognitive-Behavioral Therapy on Stigma, Anxiety, and Depression among Caregivers of Individuals with Intellectual Disability at a Neuropsychiatric Hospital in Benin City, Nigeria.

controlling for baseline differences. After adjusting for pre-test scores, there was a significant effect of CBT on associative stigma, $F(1, 20) = 2.96$, $p = .008$, partial $\eta^2 = .31$. The adjusted post-test mean for associative stigma decreased from 10.73 at pre-test to 5.09 at post-test, indicating a large effect of the intervention.

Effect of CBT on Anxiety

ANCOVA results also revealed a significant reduction in anxiety among caregivers receiving CBT, $F(1, 20) = 16.22$, $p < .001$, partial $\eta^2 = .56$. The adjusted post-

DISCUSSION

The findings of this study demonstrated that Cognitive Behavioral Therapy (CBT) effectively reduced associative-stigma, anxiety, and depression among primary caregivers of individuals with intellectual disabilities, even after statistically controlling for baseline differences. ANCOVA results showed moderate to large effect sizes across the three outcomes, indicating that the observed improvements can be attributed to the structured CBT intervention rather than pre-existing symptom differences. Specifically, caregivers reported meaningful reductions in associative-stigma ($M_{pre} = 10.73$ to $M_{post} = 5.09$), anxiety ($M_{pre} = 32.18$ to $M_{post} = 24.32$), and depression ($M_{pre} =$

test mean anxiety score decreased from 32.18 at pre-test to 24.32 at post-test, reflecting a very large treatment effect.

Effect of CBT on Depression

Similarly, CBT significantly reduced depressive symptoms after controlling for baseline scores, $F(1, 20) = 11.56$, $p < .001$, partial $\eta^2 = .48$. Pre-test mean depression scores of 19.14 were adjusted to 14.59 at post-test, indicating a large effect of the therapy.

19.14 to $M_{post} = 14.59$). These findings align with prior research supporting CBT as an evidence-based intervention for managing caregiver distress and internalized stigma (Young, 2016; Onyedibe et al., 2020; Are et al., 2021).

The structured CBT program, incorporating psychoeducation, cognitive restructuring, behavioral activation, relaxation training, stress management, exposure and social skills exercises appear effective in targeting dysfunctional thoughts and maladaptive behaviors that contribute to caregiver burden. Each component contributed to the positive outcomes observed. Psychoeducation increased participants' understanding of intellectual disability and

Dike, O. G., Uwaoma, N. C., & Ihebom, C. N. (2026). Effectiveness of Cognitive-Behavioral Therapy on Stigma, Anxiety, and Depression among Caregivers of Individuals with Intellectual Disability at a Neuropsychiatric Hospital in Benin City, Nigeria.

caregiving challenges, normalizing their experiences and reducing fear and uncertainty. Cognitive restructuring directly addressed maladaptive beliefs and distorted thinking patterns associated with anxiety, depression, and associative-stigma, helping caregivers reframe negative self-perceptions and reduce internalized distress. Behavioral activation promoted engagement in rewarding and adaptive activities, countering withdrawal and inactivity common in depression. Relaxation training and stress management techniques helped caregivers regulate physiological arousal and reduce symptoms of anxiety. Finally, exposure and social skills exercises enabled participants to gradually confront stigma-related fears and interact more confidently in social contexts, mitigating avoidance behaviors and associative-stigma. The synergistic application of these CBT skills ensured that both cognitive and behavioral domains were targeted, facilitating sustained improvements.

By equipping caregivers with coping strategies, the intervention not only alleviated current symptoms but also enhanced cognitive and emotional resilience. The reductions in associative-stigma are particularly notable, suggesting

that CBT can mitigate internalized distress that arises from public stigma, consistent with the self-stigma model whereby societal perceptions are internalized, contributing to negative affect and psychological strain (Dike et al., 2017; Kaggwa et al., 2023).

However, despite these positive outcomes, there remains a potential for relapse once formal therapeutic contact ends. Caregivers continue to face daily stressors related to caregiving responsibilities, social stigma, and limited support, which may precipitate a return of anxiety, depressive symptoms, or feelings of stigmatization. To sustain treatment gains, it is recommended that participants engage in structured follow-up sessions over six months at the Federal Neuro-Psychiatric Hospital. These sessions could include booster CBT modules, periodic symptom monitoring, and reinforcement of coping strategies, thereby helping caregivers maintain psychological well-being and resilience over time.

Overall, this study underscores the importance of culturally adapted, evidence-based interventions like CBT in low-resource settings. By reducing caregiver distress and associative-stigma, such programs not only enhance the quality of life for caregivers but also indirectly

Dike, O. G., Uwaoma, N. C., & Ihebom, C. N. (2026). Effectiveness of Cognitive-Behavioral Therapy on Stigma, Anxiety, and Depression among Caregivers of Individuals with Intellectual Disability at a Neuropsychiatric Hospital in Benin City, Nigeria.

improve care provision for individuals with intellectual disabilities. Future research should explore long-term outcomes and the integration of community-based support to complement hospital-based CBT interventions.

Limitations and Future Directions

Despite these positive findings, the study is limited by its relatively small sample size and the short-term follow-up. Future research should examine the long-term sustainability of CBT effects, explore digital or group-based CBT adaptations for broader reach, and investigate additional psychosocial factors influencing caregiver outcomes.

Recommendations

CBT should be integrated into caregiver support services at neuro-psychiatric hospitals to reduce stigma, anxiety, and depression. Mental health professionals

should be trained in caregiver-focused interventions, and routine psychological screening of primary caregivers should be implemented to ensure timely support. Culturally adapted CBT programs and larger-scale studies are encouraged to sustain caregiver well-being and improve care for individuals with intellectual disabilities.

Conclusion

In conclusion, CBT is an effective intervention for reducing associative stigma, anxiety, and depression among primary caregivers of individuals with intellectual disability in Nigeria. Implementing culturally adapted CBT programs in neuro-psychiatric and community health settings can substantially improve caregivers' psychological well-being, ultimately benefiting both caregivers and care recipients.

Declaration of Originality

I declare that this manuscript is my original work and has not been submitted or published elsewhere. I have reviewed and approved the final version of the manuscript.

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Conflict of Interest

I declare that there are no conflicts of interest regarding the publication of this paper.

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Dike, O. G., Uwaoma, N. C., & Ihebom, C. N. (2026). Effectiveness of Cognitive-Behavioral Therapy on Stigma, Anxiety, and Depression among Caregivers of Individuals with Intellectual Disability at a Neuropsychiatric Hospital in Benin City, Nigeria.

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Dike, O. G., Uwaoma, N. C., & Ihebom, C. N. (2026). Effectiveness of Cognitive-Behavioral Therapy on Stigma, Anxiety, and Depression among Caregivers of Individuals with Intellectual Disability at a Neuropsychiatric Hospital in Benin City, Nigeria.

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