GIDAN MADI MULTI-DISCIPLINARY JOURNAL OF TEACHER EDUCATION (GMMJTE), 2 (1) DECEMBER, 2025
ISSN: 3092-8397; Journal home page: https://www.fcegmmdjte.org.ng

DEPRESSION AMONG CHILDREN WITH INTELLECTUAL DISABILITIES IN SOKOTO STATE, NIGERIA: ANALYSIS OF PREVALENCE, GENDER RISK, AND CULTURAL EXPLANATORY MODELS

UMAR, Zubairu, BAGUDA, Sulaiman Abubakar, IBRAHIM, Abdulaziz Hadi, SARKI, Junaidu, and SHEHU, Shamsuddeen Nasir

Clinical Services, Federal Neuropsychiatric Hospital kware, Sokoto, Nigeria

**Corresponding author: zubairu.umar@npmcn.edu.ng*

ABSTRACT

The study investigated the manifestation and interpretation of depression among children with intellectual disabilities (ID) within the Hausa-Islamic cultural context of Sokoto State, Nigeria. The study was guided by four research questions and three null hypotheses. A mixed-methods research design was adopted, integrating quantitative and qualitative approaches. The sample comprised 87 pupils with documented intellectual disabilities drawn from a special education school in Sokoto, alongside 14 qualitative key informants (12 caregivers and 2 teachers). Quantitative data were collected using a socio-demographic questionnaire and the Kiddie Schedule for Affective Disorders and Schizophrenia–Present and Lifetime Version (K-SADS-PL), adapted in line with the Diagnostic Manual–Intellectual Disability guidelines. Intellectual disability severity was obtained from school records. Qualitative data were generated through semi-structured interviews and ethnographic observations. Descriptive statistics, chi-square tests, and logistic regression were used for quantitative analysis, while thematic analysis was employed for qualitative data. Findings revealed a 19.5% prevalence of depressive disorder. Female gender significantly predicted depression (AOR = 3.80, $p < 0.05$), whereas severity of intellectual disability showed no significant association. Depression was predominantly manifested through somatic complaints, behavioral changes, and developmental regression. Caregivers interpreted symptoms mainly through religious explanatory models, including divine will (Kaddara) and spiritual attack (Sihir/Tsoro). The study recommended culturally responsive screening tools, structured training in cultural psychiatry for healthcare workers, collaboration with religious leaders, gender-sensitive interventions, and integration of child mental health services into primary healthcare and special education systems.

ARTICLE INFO
Article History
Received: 13.11.2025
Received in revised form: 27.12.2025
Accepted: 29.12.2025
Published online: 31.12.2025

KEYWORDS
Depression, intellectual disability, culture, student, Nigeria

INTRODUCTION

Major depressive disorder constitutes a leading cause of disability worldwide, yet its recognition and interpretation remain profoundly shaped by cultural contexts (World Health Organization, 2017). Major depressive disorder is a clinically significant mental health condition characterized by a sustained period of pervasive sadness or loss of interest in previously enjoyable activities, accompanied by cognitive, emotional, behavioral, and physical changes that substantially impair an individual’s ability to function in daily life. Scholarly definitions further describe it as a disorder marked by at least two weeks of depressed mood or diminished interest or pleasure, alongside symptoms such as changes in appetite or sleep, fatigue, impaired concentration, feelings of worthlessness, or recurrent thoughts of death, resulting in clinically significant distress or impairment in social, academic, or other important areas of functioning (American Psychiatric Association, 2013). Similarly, the World Health Organization (2019) conceptualizes depressive disorder as a condition involving persistent sadness, loss of interest, reduced energy, disturbed sleep or appetite, feelings of guilt or low self-worth, and poor concentration, lasting for at least two weeks and impairing daily functioning.

In Northern Nigeria, particularly in Sokoto State, including the metropolitan context of Sokoto, a region characterized by strong Islamic traditions and Hausa cultural hegemony, the understanding of mental health conditions, particularly among vulnerable populations such as children with intellectual disabilities (ID), remains critically understudied. Children with ID face a heightened risk for depression due to biopsychosocial vulnerabilities including social stigma, communication deficits, increased dependency, and greater exposure to adverse life events (Hurley, 2003). However, when depressive symptoms emerge in this population within non Western cultural settings, they risk being misattributed to the primary disability, spiritual afflictions, or culturally sanctioned idioms of distress, leading to significant delays in appropriate intervention.

Within this broader clinical understanding of major depressive disorder, it becomes necessary to situate the condition in relation to populations with additional developmental vulnerabilities. Intellectual disability is defined as a neurodevelopmental disorder characterized by significant limitations in intellectual functioning, including reasoning, learning, and problem solving, as well as in adaptive behavior, which covers conceptual, social, and practical skills necessary for everyday life, with onset during the developmental period (American Psychiatric Association, 2013). Similarly, the World Health Organization (2019) conceptualizes intellectual disability as a condition marked by reduced ability to understand new or complex information and to learn and apply new skills, resulting in impaired independent functioning that begins before adulthood and has lasting developmental implications.

The intersection of intellectual disability, childhood depression, and cultural interpretation creates a complex clinical challenge. Research consistently demonstrates that individuals in many African contexts express psychological distress through somatic complaints rather than verbal reports of low mood (Kleinman, 2004; Sorsdahl et al., 2010). Concurrently, cultural and religious explanatory models profoundly influence perceptions of illness causality, often attributing suffering to spiritual, social, or moral forces rather than biomedical dysfunction (Weiss, 1997). Within the Hausa Islamic framework of Northern Nigeria, where health and illness are understood holistically and spiritual attributions for misfortune are prevalent, families frequently prioritize consultations with traditional healers and Islamic scholars, commonly referred to as *Mallams*, over biomedical care (Abbo, 2011; Barke et al., 2011).

This cultural configuration creates a critical care gap. Healthcare providers trained predominantly in Western biomedical paradigms may misrecognize somatic and behavioral idioms of distress as non-psychiatric, misinterpret caregiver reports framed in spiritual language, and design treatment plans that are misaligned with family worldviews, resulting in non-adherence (van der Zeijst et al., 2021). Without systematic investigation into how depression manifests and is interpreted within specific cultural contexts, particularly in Sokoto and the wider Northern Nigerian setting, efforts to develop effective mental health services for children with ID will remain fundamentally limited.

STATEMENT OF THE PROBLEM

Children with intellectual disabilities (ID) are at heightened risk for depression due to biopsychosocial vulnerabilities, including communication deficits, cognitive limitations, increased dependency, exposure to adverse life experiences, and heightened stigma (Hurley, 2003). These vulnerabilities not only increase susceptibility to depressive symptomatology but also complicate its identification, particularly in childhood where emotional expression may already be developmentally constrained. However, the recognition and treatment of depression in this population are profoundly complicated within cultural contexts where mental distress is expressed and interpreted through non-Western frameworks.

In Northern Nigeria, specifically in Sokoto State, a socioculturally homogeneous setting shaped by Hausa Islamic traditions, illness perceptions are deeply embedded within spiritual and moral explanatory models. Within this context, suffering is frequently attributed to divine will, locally conceptualized as Kaddara, or to spiritual attack, referred to as Sihir (Weiss, 1997; Ostien, 2009). Such interpretations do not merely coexist with biomedical explanations but often function as the primary framework through which families understand childhood behavioral and emotional changes. Consequently, depressive symptoms in children with ID are often manifested somatically or behaviorally rather than verbally, aligning with broader cultural idioms of distress observed in many African settings (Kleinman, 2004; Sorsdahl et al., 2010). Persistent fatigue, unexplained bodily complaints, social withdrawal, irritability, or changes in sleep and appetite may not be conceptualized as indicators of a mood disorder but rather as signs of spiritual imbalance or external affliction.

Within Sokoto State, where religious authority and community norms strongly influence health seeking behavior, these symptom presentations are frequently interpreted within a spiritual framework that prioritizes consultation with Islamic scholars and traditional healers over biomedical mental health services (Abbo, 2011). While such pathways provide culturally meaningful support, they may inadvertently delay or preclude timely psychiatric assessment and evidence based intervention for depression. At the same time, healthcare providers trained predominantly in Western diagnostic paradigms may fail to recognize culturally mediated presentations of depression, particularly when symptoms are communicated through somatic complaints or framed in spiritual language. This mismatch between biomedical models and local belief systems creates a critical care gap. Families may perceive clinical services as culturally incongruent, while clinicians may misattribute depressive manifestations to the primary intellectual disability or to non-psychiatric causes, thereby compounding underdiagnosis and undertreatment (van der Zeijst et al., 2021).

Despite the heightened vulnerability of children with ID and the strong influence of cultural explanatory models in Sokoto State, there remains limited empirical investigation into how depression is specifically expressed, labeled, interpreted, and managed within this context. The absence of culturally grounded evidence constrains the development of responsive screening tools, diagnostic frameworks, and intervention strategies tailored to this population. There is therefore a pressing need to systematically examine how depression manifests among children with ID in Sokoto State and how caregivers, religious leaders, and healthcare providers interpret these manifestations. Such understanding is essential to inform culturally competent mental health services capable of bridging biomedical practice with locally embedded belief systems, reducing delays in care, and improving psychosocial outcomes for this vulnerable group.

PURPOSE OF THE STUDY

The purpose of this study was to explore how depression manifests and is interpreted among children with intellectual disabilities within the culturally homogeneous context of Sokoto, Nigeria, with particular attention to the phenomenological presentation of depressive symptoms and the cultural explanatory models that shape caregivers’ understanding and help seeking behaviours.

RESEARCH QUESTIONS

The following research questions were formulated and examined quantitatively within the clinical sample in Sokoto State:

1. What are the socio-demographic and cultural characteristics of children with intellectual disabilities?
2. What is the prevalence of depressive disorder among children with intellectual disabilities?
3. How are somatic and behavioural symptoms of depression manifested among children with intellectual disability, as reported by caregivers and teachers?
4. What religious and spiritual explanatory models do caregivers use to interpret the condition and behavioural changes of children with intellectual disabilities?

RESEARCH HYPOTHESES

The following null hypotheses were formulated and tested at the 0.05 level of significance:

1. There is no significant association between gender and prevalence of depressive disorder among children with intellectual disabilities in Sokoto State, Nigeria.
2. There is no significant association between severity of intellectual disability and prevalence of depressive disorder among children with intellectual disabilities in Sokoto State, Nigeria.
3. Gender does not significantly predict depressive disorder among children with intellectual disabilities.

METHODOLOGY

Research Design

A mixed-methods design was employed, integrating quantitative and qualitative approaches to provide comprehensive understanding of depression. This design was selected to ensure simultaneous collection of prevalence data and in-depth exploration of cultural meanings, enabling triangulation of findings from multiple sources.

Area of Study/Population of the Study

The study was conducted at Abdulrashid Adisa Raji Special School, Sokoto, Nigeria, over a four-month period. Sokoto State is located in the extreme northwest of Nigeria and is characterized by high cultural and religious homogeneity, with the Hausa ethnic group and Islam constituting the dominant sociocultural forces (Ostien, 2009). A. A Raji Special School, Sokoto serves as a centralized point for accessing children with ID from across the state and beyond, making it an appropriate setting for this investigation. The target population comprised all children and adolescents attending the A.A. Raji Special School during the study period.

Sample and Sampling Techniques

For the quantitative component, a total sample of 87 pupils was selected using a combination of stratified and purposive sampling techniques. Stratified sampling was first employed to ensure proportional representation across relevant subgroups such as age categories (6-12 years and 13-18 years) and gender, thereby enhancing representativeness and reducing sampling bias. Within each stratum, purposive sampling was applied to identify and recruit pupils who met the primary eligibility requirement of having a documented diagnosis of intellectual disability and who satisfied the study’s inclusion criteria. Participants included students aged 6–18 years with a documented diagnosis of intellectual disability.

For the qualitative component, a total of 14 key informants participated. They comprised 12 caregivers and 2 teachers, purposively selected.

Instruments for Data Collection

Quantitative Instruments:

Socio-demographic Questionnaire: A structured, researcher-designed questionnaire collected data on age, gender, ethnicity, religion, parental education, parental occupation, and socioeconomic status. Socioeconomic status was classified as upper, middle, or lower based on parental occupation and education using standard Nigerian classification.

Kiddie Schedule for Affective Disorders and Schizophrenia-Present and Lifetime Version (K-SADS-PL): This semi-structured diagnostic interview (Kaufman et al., 1997) was used to diagnose depressive disorder. The instrument was administered by a trained clinician and adapted for children with ID following the Diagnostic Manual-Intellectual Disability (DM-ID) guidelines (Fletcher et al., 2007), with particular attention to behavioral indicators and somatic complaints. A previously validated Hausa version by Abubakar, Adedokun, and Omigbodun, (2017) used in Zaria, Nigeria, was employed, which had undergone forward- and back-translation and piloting for cultural appropriateness.

Intellectual Disability Severity Assessment: Severity of ID was classified using school records based on prior psychological assessment (mild, moderate, severe, profound) according to standard diagnostic criteria.

***Qualitative Instruments**:*

Semi-structured In-depth Interview Guide: An interview guide was developed by the researchers based on the Explanatory Model Interview Catalogue framework (Weiss, 1997) and explored: (a) recognition and description of child's problems, (b) perceived causes of ID and behavioural/emotional changes, (c) help-seeking actions taken, and (d) interactions with healthcare and spiritual systems. The guide was translated into Hausa and back-translated to ensure conceptual equivalence.

Ethnographic Observation Guide: A structured observation guide documented children's behaviours in classroom and home settings, interactions with peers and adults, and any distress manifestations.

Validity of the Instruments

The content validity of the socio-demographic questionnaire was established through review by three experts in psychiatry, clinical psychology, and cultural studies. The K-SADS-PL has established validity in diverse cultural settings (Kaufman et al., 1997). The Hausa version was previously validated in Northern Nigeria through expert review and pilot testing with 15 children with ID (not included in the main study), which confirmed comprehension and cultural appropriateness of items. For the qualitative guide, face validity was established through review by cultural experts and pilot testing with two caregivers.

Reliability of the Instruments

The K-SADS-PL has demonstrated good to excellent inter-rater reliability (kappa coefficients 0.70-1.00) in previous studies (Kaufman et al., 1997). For this study, the clinician administering the instrument was trained to criterion (90% agreement) by an experienced child psychiatrist. Inter-coder reliability for qualitative analysis was assessed on a subset of transcripts (n=4), yielding a Cohen's κ of 0.85, indicating excellent agreement.

Methods of Data Collection

Quantitative Data Collection:

Following ethical approval, the school administration was contacted and parent-teacher meetings were held to explain study purposes. Written informed consent was obtained from caregivers, and child assent was sought where possible. The socio-demographic questionnaire was administered to caregivers in Hausa through face-to-face interviews conducted by trained research assistants. The K-SADS-PL was administered to each child-caregiver by the trained clinician in a private room in the school, with each interview session lasting approximately 60-90 minutes. Caregivers were interviewed first, followed by the child, with final ratings integrating both sources.

Qualitative Data Collection:

Ethnographic observations were conducted in the school over four weeks (3 days/week, 4 hours/day), documenting children's behaviours, interactions, and any distress manifestations. Selected home visits (n=8) were conducted to observe family environments. Semi-structured in-depth interviews were conducted with caregivers and teachers at locations of their choice (homes, school, or community settings). Interviews lasted 45-90 minutes, and were conducted in Hausa, audio-recorded with permission, transcribed verbatim, and translated into English by native Hausa speakers fluent in English, with research team review for accuracy and cultural nuance. Data collection continued until thematic saturation was achieved.

Methods of Data Analysis

Quantitative Data Analysis:

Data were analyzed using the SPSS software. Descriptive statistics (frequencies, percentages, means, and standard deviations) summarized sample characteristics and depression prevalence. For hypothesis testing, chi-square and repression analysis were used.

Qualitative Data Analysis:

Thematic analysis was employed following the six-phase framework outlined by Braun and Clarke (2006): (1) familiarization with data through repeated reading, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) producing the report. This process was conducted manually. Transcripts were printed and coded line-by-line independently by two researchers using highlighters and marginal notes. Coders met to compare initial coding frameworks, discuss discrepancies, and collaboratively refine codes into potential themes using thematic maps. Themes were generated and refined iteratively through constant comparison within and across transcripts. Trustworthiness was ensured through researcher reflexivity (maintaining journals to bracket preconceptions), regular team debriefings, member checking (returning to three participants to verify interpretations), and triangulation of data from observations and interviews.

RESULTS

Research Question 1: What are the socio-demographic and cultural characteristics of children with intellectual disabilities?

Table 1: Socio-demographic and Cultural Characteristics of Participants (N = 87)

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	6-9	12	13.8
	10-13	37	42.5
	14-18	38	43.7
Gender	Male	58	66.7
	Female	29	33.3
Ethnicity	Hausa	70	80.5
	Yoruba	7	8.0
	Igbo	5	5.7
	Others	5	5.7
Religion	Muslim	80	92.0

Variable	**Category**	**Frequency (n)**	**Percentage (%)**
	Christian	7	8.0
Socioeconomic Status	Upper	12	13.8
	Middle	29	33.3
	Lower	46	52.9
Paternal Education	No formal education	41	47.1
	Qur'anic only	23	26.4
	Primary/Secondary	15	17.2
	Tertiary	8	9.2
Maternal Education	No formal education	53	60.9
	Qur'anic only	19	21.8
	Primary/Secondary	11	12.6
	Tertiary	4	4.6
IQ Level	Mild	5	5.7
	Moderate	42	48.3
	Severe	38	43.7
	Profound	2	2.3

Table 1 presents the socio-demographic and cultural characteristics of the 87 participants. The age distribution indicates that the majority of pupils were adolescents, with 43.7% aged 14–18 years and 42.5% aged 10–13 years, while only 13.8% were between 6–9 years, suggesting that older children constituted the larger proportion of the sample. In terms of gender, males predominated (66.7%) compared to females (33.3%). Ethnically, most participants were Hausa (80.5%), with smaller proportions of Yoruba (8.0%), Igbo (5.7%), and other ethnic groups (5.7%). Similarly, the sample was overwhelmingly Muslim (92.0%), while Christians accounted for 8.0%, reflecting the dominant religious and cultural context of the study area.

Socioeconomic data show that over half of the participants (52.9%) were from lower socioeconomic backgrounds, 33.3% from middle socioeconomic status, and 13.8% from upper socioeconomic status. Parental educational attainment was generally low, particularly among mothers: 60.9% of mothers had no formal education compared to 47.1% of fathers. A notable proportion of fathers (26.4%) and mothers (21.8%) had only Qur'anic education, while relatively few had attained tertiary education (9.2% of fathers and 4.6% of mothers). Regarding intellectual functioning, nearly half of the participants (48.3%) had moderate intellectual disability, followed by severe intellectual disability (43.7%), whereas mild (5.7%) and profound (2.3%) levels were comparatively rare. The frequencies and percentages across categories are internally consistent and sum appropriately to the total sample size (N = 87) for each variable.

Research Question 2: What is the prevalence of depressive disorder among children with intellectual disabilities?

Table 2: Prevalence of Depressive Disorder among Children with ID (N = 87)

Depression Status	Frequency (n)	Percentage (%)	95% Confidence Interval
Depressed	17	19.5	11.8 - 29.3
Non-depressed	70	80.5	70.7 - 88.2
Total	87	100.0	

Table 2 presents the prevalence of depressive disorder among children with intellectual disability (ID) in the study sample (N = 87). Out of the 87 participants assessed, 17 were identified as having depressive disorder, yielding a prevalence rate of 19.5%. The remaining 70 participants (80.5%) were classified as non-depressed. These figures indicate that approximately one in five children with ID in the study population met the criteria for depressive disorder at the time of assessment.

The 95% confidence interval for the prevalence of depression ranged from 11.8% to 29.3%, indicating that the true population prevalence is likely to fall within this interval. The corresponding confidence interval for the proportion of non-depressed participants would logically range from 70.7% to 88.2%, reflecting the complementary distribution. The relatively wide confidence interval for depression suggests some variability in the estimate, which may be attributable to the modest sample size. Thus, the findings demonstrate a notable burden of depressive disorder among children with intellectual disability in the study setting.

Research Question 3: How are somatic and behavioral symptoms of depression manifested among children with intellectual disabilities, as reported by caregivers and teachers?

Table 3: Somatic and Behavioral Manifestations of Depression

Theme	Sub-theme	Illustrative Quote	Informant
Somatic Complaints	Headaches	"He often complains of headache almost every morning, saying his head is heavy and he cannot do anything."	Caregiver 7, mother of 12-year-old boy with depression
	Bodily weakness (*rashin lafiya*)	"She keeps saying her body is weak, that she has no strength. Even walking to the classroom is too much for her."	Teacher 2, female teacher
	General pains	"He points to different parts of his body—his chest, his legs—and says they are hurting him. But when we check, there is nothing wrong."	Caregiver 12, father of 15-year-old boy
Behavioral Changes	Aggression	"She started fighting everyone, even her younger sister who she loves, for no reason. She throws things and screams. This is completely new."	Caregiver 4, mother of 10-year-old girl
	Social withdrawal	"He stopped playing with his friends during break time. He just sits alone in a corner, looking at the ground, not talking to anyone."	Teacher 1, male teacher

Theme	Sub-theme	Illustrative Quote	Informant
Regression	Irritability	"Everything makes him angry now. Small things that never bothered him before—he will shout and cry."	Caregiver 9, grandmother
	Loss of self-care skills	"My worry is that he started wetting the bed again at night. He is 14 years old and I have to dress him like a small child."	Caregiver 2, mother of 14-year-old boy
	Loss of acquired abilities	"She used to help with simple chores, fetching water, but now she just sits. She has forgotten everything."	Caregiver 10, aunt

Table 3 presents qualitative themes reflecting the somatic and behavioral manifestations of depression among children with intellectual disability, as reported by caregivers and teachers. Under the theme of somatic complaints, participants described recurrent headaches, generalized body weakness (locally expressed as *rashin lafiya*), and diffuse bodily pains without identifiable medical causes. Caregivers and teachers consistently noted that affected pupils frequently complained of feeling “heavy,” weak, or in pain, despite clinical evaluations revealing no obvious physical pathology. These accounts suggest that depressive symptoms in this population may be expressed predominantly through physical complaints, which can obscure underlying emotional distress and complicate early identification within school and home settings.

The theme of behavioral changes encompassed aggression, social withdrawal, irritability, and regression in previously acquired skills. Informants reported sudden onset of fighting, screaming, and heightened anger over minor issues, alongside marked withdrawal from peer interactions and reduced participation in routine activities. Additionally, some caregivers observed regression, including loss of self-care abilities such as bedwetting and diminished engagement in simple household tasks previously mastered. Collectively, these findings indicate that depression among children with intellectual disability in this context manifests through both externalizing behaviors (e.g., aggression and irritability) and internalizing patterns (e.g., withdrawal), as well as developmental regression, underscoring the need for context-sensitive assessment approaches that go beyond conventional verbal reports of mood disturbance.

Research Question 4: What religious and spiritual explanatory models do caregivers use to interpret the condition and behavioural changes of children with intellectual disabilities?

Table 4: Religious and Spiritual Explanatory Models

Causal Attribution	Description	Illustrative Quote	Informant
Divine Will (***Kaddara***)	The child's condition is accepted as predestined by Allah; a test of faith or a blessing requiring patience (*hakuri*)	"This child is from Allah. Whatever condition he has, it is what Allah has written for him. We cannot question Allah's will. We must have patience and pray."	Caregiver 5, father of 9-year-old boy with ID
		"Some children are born like this because Allah wants to test the parents. It is a test of our faith and our patience."	Caregiver 11, mother of 13-year-old girl
Spiritual Attack (***Sihir/Tsoro***)	Symptoms, especially acute behavioral changes, attributed to witchcraft, evil eye (*mugun ido*), or jealousy from others	"This sudden change, the way he started behaving violently—it is not normal sickness. Someone has done something to him, some witchcraft because of jealousy."	Caregiver 8, father of 16-year-old boy with recent behavioral deterioration
		"I took her to a Mallam who said it is *tsoro* (spiritual affliction). Someone who is jealous of our family has put something on her."	Caregiver 3, mother of 11-year-old girl
Consequence of Sin	The child's condition may result from parental or ancestral sins	"Sometimes I think, maybe it is because of something I did in my past. Maybe Allah is punishing me through this child."	Caregiver 6, father of 8-year-old boy (tearful)
		"My mother said perhaps our family has a debt we have not paid, or a sin we have not repented from."	Caregiver 1, mother of 12-year-old girl

Table 4 presents the dominant religious and spiritual explanatory models through which caregivers interpret the intellectual disability and associated behavioural changes of their children. Three major themes emerged: Divine Will Kaddara, Spiritual Attack Sihir or Tsoro, and Consequence of Sin. The most frequently expressed attribution was Divine Will, where caregivers framed the child's condition as predestined by Allah and understood it as a test of faith requiring patience hakuri and prayer. Illustrative accounts from caregivers of children aged 9 and 13 years reflected theological acceptance, submission, and reliance on spiritual coping mechanisms. This interpretation appears to function as a meaning making framework that reduces existential distress while reinforcing religious resilience and endurance within the family context.

In contrast, some caregivers attributed the child's symptoms particularly sudden behavioural deterioration to Spiritual Attack, including witchcraft, evil eye mugun ido, jealousy, or tsoro spiritual affliction. These narratives were more common among caregivers reporting recent or acute behavioural changes, especially in older children aged 11 to 16 years. A third but less dominant theme was Consequence of Sin, where caregivers expressed guilt and moral self-appraisal, attributing the child's condition to personal or ancestral wrongdoing. Emotional undertones such as tearfulness were evident in some accounts, suggesting internalised blame and spiritual anxiety. Overall, the findings indicate that caregivers' interpretations are deeply embedded in religious cosmology and socio cultural belief systems, shaping help seeking patterns, coping strategies, and perceptions of causality.

HYPOTHESIS TESTING

Hypothesis 1: There is no significant association between gender and prevalence of depressive disorder among children with intellectual disabilities in Sokoto State, Nigeria.

Table 5: Cross-tabulation of Depression Status by Gender

Gender	**Depressed (%)**	**Non-depressed (%)**	**Total (%)**	**χ^2**	**df**	**p-value**
Male	7 (41.2)	51 (72.9)	58 (66.7)	6.21	1	0.013
Female	10 (58.8)	19 (27.1)	29 (33.3)			
Total	17 (100.0)	70 (100.0)	87 (100.0)			

Table 5 presents the cross-tabulation of depression status by gender among the 87 participants. Of the 17 pupils identified as depressed, 10 (58.8%) were female while 7 (41.2%) were male. Conversely, among the 70 pupils classified as non-depressed, 51 (72.9%) were male and 19 (27.1%) were female. Although males constituted a larger proportion of the overall sample (58; 66.7%) compared to females (29; 33.3%), the proportion of depression was markedly higher among females. Specifically, 10 out of 29 females (34.5%) were depressed compared to 7 out of 58 males (12.1%), indicating a substantially greater burden of depressive disorder among female pupils.

The chi-square analysis revealed a statistically significant association between gender and depression status, $\chi^2(1, N = 87) = 6.21$, $p = 0.013$. Since the p-value is less than the conventional alpha level of 0.05, the null hypothesis of no association between gender and depression is rejected. This finding suggests that gender is significantly related to depression status in this population, with female pupils demonstrating a significantly higher likelihood of experiencing depressive disorder compared to their male counterparts.

Hypothesis 2: There is no significant association between severity of intellectual disability and prevalence of depressive disorder among children with intellectual disabilities in Sokoto State, Nigeria.

Table 6: Cross-tabulation of Depression Status by IQ Level

IQ Level	Depressed (%)	Non-depressed (%)	Total (%)	χ^2	df	p-value
Mild	1 (5.9)	4 (5.7)	5 (5.7)	4.46	3	0.215
Moderate	11 (64.7)	31 (44.3)	42 (48.3)			
Severe	5 (29.4)	33 (47.1)	38 (43.7)			
Profound	0 (0.0)	2 (2.9)	2 (2.3)			
Total	17 (100.0)	70 (100.0)	87 (100.0)			

Table 6 presents the cross-tabulation of depression status by IQ level among the 87 participants. Of the 17 pupils identified as depressed, the majority were within the moderate intellectual disability category (11; 64.7%), followed by those with severe intellectual disability (5; 29.4%), while only one case (5.9%) was recorded among pupils with mild intellectual disability. No case of depression was observed among pupils with profound intellectual disability. Among the 70 non-depressed pupils, the largest proportion was also found in the moderate category (31; 44.3%), followed by the severe category (33; 47.1%), with smaller proportions in the mild (4; 5.7%) and profound (2; 2.9%) categories. Overall, most participants were within the moderate (42; 48.3%) and severe (38; 43.7%) IQ levels, whereas only a small fraction fell within the mild (5; 5.7%) and profound (2; 2.3%) categories. The percentages within the depressed and non-depressed groups sum appropriately to 100%, indicating internal consistency of the subgroup distributions.

The chi-square test of association revealed no statistically significant relationship between IQ level and depression status, $\chi^2(3) = 4.46$, $p = 0.215$. Since the p-value exceeds the conventional alpha level of 0.05, the null hypothesis of no association between IQ level and depression status is retained. This suggests that, within this sample, depression was not significantly associated with the severity level of intellectual disability, despite observable variations in proportional distribution across IQ categories.

Hypothesis 3: Gender does not significantly predict depressive disorder among children with intellectual disabilities.

Table 7: Binary Logistic Regression Analysis of Factors Associated with Depression

Variable	B	S.E.	Wald	df	p-value	Adjusted OR	95% C.I. for OR
Gender (Female vs. Male)	1.335	0.552	5.85	1	0.016	3.80	1.29 - 11.21
Paternal Education (No formal vs. Educated)	0.892	0.587	2.31	1	0.129	2.44	0.77 - 7.71
Paternal Employment (Unemployed vs. Employed)	0.743	0.612	1.47	1	0.225	2.10	0.63 - 6.98
Constant	-2.845	0.634	20.14	1	<0.001	0.06	

Table 7 presents the results of a binary logistic regression analysis examining factors associated with depression among the participants. Gender emerged as a statistically significant predictor of depression. Female participants were significantly more likely to experience depression compared to their male counterparts (B = 1.335, S.E. = 0.552, Wald = 5.85, p = 0.016). The adjusted odds ratio (AOR = 3.80; 95% CI: 1.29–11.21) indicates that females had approximately 3.8 times higher odds of depression than males, and the confidence interval does not include 1, confirming statistical significance. In contrast, paternal education (no formal education vs. educated) was not significantly associated with depression

(B = 0.892, S.E. = 0.587, Wald = 2.31, p = 0.129; AOR = 2.44; 95% CI: 0.77–7.71), as the confidence interval includes 1.

Similarly, paternal employment status (unemployed vs. employed) did not significantly predict depression (B = 0.743, S.E. = 0.612, Wald = 1.47, p = 0.225; AOR = 2.10; 95% CI: 0.63–6.98), with the confidence interval also crossing 1. Although the odds ratios for paternal education and employment suggest increased likelihood of depression among participants whose fathers had no formal education or were unemployed, these associations were not statistically significant at the 0.05 level. The constant term (B = −2.845, S.E. = 0.634, Wald = 20.14, p < 0.001; OR = 0.06) represents the baseline log-odds of depression when all predictor variables are at their reference categories, indicating a low underlying probability of depression in the reference group. Thus, gender was the only significant independent predictor of depression in the adjusted model.

DISCUSSION

The study examined the manifestation and interpretation of depression in children with intellectual disabilities within the Hausa-Islamic cultural context of Sokoto, Northern Nigeria. The findings illuminate how cultural and religious frameworks fundamentally shape both the expression of depressive symptoms and the help-seeking behaviors of caregivers, with significant implications for mental health service delivery.

Prevalence and Cultural Context of Depression

The 19.5% prevalence of depressive disorder found in this study is substantially higher than the 2.7% reported by Dekker and Koot (2003) in the Netherlands and exceeds rates documented in some high-income countries. However, this finding aligns with studies from low-resource settings where children with ID face compounded psychosocial stressors including poverty, stigma, limited educational opportunities, and restricted access to mental health care (Adewuya & Makanjuola, 2008). The elevated prevalence may reflect the cumulative burden of these risk factors within the Sokoto context, where as shown in Table 1, 52.9% of families were in lower socioeconomic strata and parental education, particularly maternal, was markedly low. This socioeconomic vulnerability, combined with the additional challenges of caring for a child with ID in a resource-limited setting, likely contributes to the high depression rates observed.

Gender Differences in Depression

The finding that female gender was a significant independent predictor of depression (OR = 3.8) warrants careful consideration. This gender disparity exceeds that typically found in general child populations and may reflect several intersecting factors. First, within Hausa cultural contexts, girls face earlier and more stringent social expectations, greater restrictions on mobility, and heightened responsibilities for domestic labor, potentially creating increased stress. Second, girls with ID may be particularly vulnerable to neglect or differential treatment compared to male siblings with ID, as sons are often prioritized for resources and attention in patriarchal Northern Nigerian families (Ostien, 2009). Third, caregiver reporting patterns may differ by child gender, with behavioral changes in girls perhaps more readily noticed or interpreted as problematic when they deviate from expected feminine norms of passivity and compliance. These findings echo Adewuya and Makanjuola's (2008) observation that gender mediates mental health experiences in complex ways within Nigerian cultural contexts. The persistence of gender as a significant predictor after controlling for other factors in logistic regression underscores its robust association with depression vulnerability.

Non-Association with IQ Level

The absence of significant association between IQ level and depression (p = 0.215) suggests that within this context, psychosocial and cultural factors may be more potent determinants of depression risk than the severity of cognitive impairment itself. This finding supports Hurley's (2003) assertion that depression in ID is better understood through biopsychosocial frameworks that emphasize environmental and relational factors rather than through purely deficit-based models. Children across all levels of ID severity appear equally vulnerable to depression when exposed to adverse circumstances, stigma, and limited support. This finding has important clinical implications, suggesting that screening for depression should be equally rigorous regardless of the child's level of intellectual impairment, rather than assuming that those with more severe disabilities are somehow protected from or less capable of experiencing depression.

Somatic and Behavioural Manifestation

The qualitative finding that depressive symptoms were expressed primarily through somatic complaints and behavioral changes [with virtual absence of verbal mood reports] aligns robustly with transcultural psychiatry literature documenting somatization of distress in non-Western contexts (Kleinman, 2004; Sorsdahl et al., 2010). The culturally salient idiom *rashin lafiya* (bodily weakness) served as a vehicle for communicating psychological distress in terms comprehensible within local frameworks. Behavioral manifestations (aggression, withdrawal, regression) provided observable indicators that caregivers could recognize, even when they lacked vocabulary for emotional states. As illustrated, caregivers described concrete behavioural changes: "She started fighting everyone," "He stopped playing with his friends," "He started wetting the bed again." These observable indicators became the primary language of distress.

This presentation pattern creates a diagnostic challenge. Clinicians trained in Western psychiatric paradigms, which prioritize verbal reports of sad mood, anhedonia, and cognitive symptoms (guilt, worthlessness), may fail to recognize depression when these verbal indicators are absent. The DM-ID guidelines (Fletcher et al., 2007) emphasize the importance of behavioral equivalents and somatic presentations in ID populations, but these guidelines are not routinely integrated into Nigerian medical training. Consequently, depressive episodes risk being misattributed to the primary disability, behavioral problems requiring discipline, or physical illness requiring general medical investigation. This misattribution likely contributes to the substantial treatment gap for mental health conditions documented across sub-Saharan Africa (World Health Organization, 2017).

Religious Explanatory Models

The dominance of Islamic spiritual frameworks in interpreting both ID and depressive symptoms reflects the deep integration of religion into all aspects of life in Northern Nigeria (Ostien, 2009). The three causal attributions identified (divine will (*Kaddara*), spiritual attack (*Sihir/Tsoro*), and consequence of sin) represent coherent explanatory models that provide meaning, reduce uncertainty, and prescribe action. These findings resonate with Weiss's (1997) work on explanatory models and with studies from other Muslim-majority African contexts (Abbo, 2011; Barke et al., 2011).

The attribution to divine will (*Kaddara*) served a dual function. On one hand, it promoted acceptance and patience (*hakuri*), potentially reducing caregiver distress and providing a framework for coping with chronic disability. As one caregiver expressed, "We cannot question Allah's will. We must have patience and pray." This fatalistic acceptance can be psychologically protective, reducing self-blame and providing meaning in the face of suffering. On the other hand, this attribution could lead to therapeutic nihilism. If the condition is Allah's will, why seek change? The attribution to spiritual attack (*Sihir/Tsoro*) mobilized active help-seeking, but within spiritual rather than biomedical domains. Significantly, these models were not simply "beliefs" held in isolation but were embedded in community practices, reinforced by respected religious authorities (*Mallams*), and continuously validated through social networks. Van der Zeijst et al. (2021) similarly found that community health workers in South

Africa held hybrid explanatory models that integrated biomedical and spiritual elements, suggesting that such pluralistic frameworks are common across African contexts.

Integration of Quantitative and Qualitative Findings

The mixed-methods design allows for integration of findings across components. The quantitative prevalence of 19.5% gains deeper meaning when understood alongside qualitative findings about somatic and behavioural presentation. Many of these 17 children might have remained undiagnosed if assessment relied solely on verbal mood reports. Similarly, the gender disparity identified quantitatively is illuminated by qualitative insights about gendered expectations and differential treatment of girls within Hausa families. The lack of association with IQ level is contextualized by qualitative findings showing that spiritual interpretations were applied across all levels of ID severity, suggesting cultural factors transcend cognitive differences. This integration demonstrates the value of mixed-methods approaches in transcultural psychiatric research, where numbers alone cannot capture the full complexity of illness experiences (Weiss, 1997).

LIMITATIONS

Several limitations should be considered when interpreting these findings. First, the study's findings are drawn from a highly homogeneous sample within a single special school, which limits generalizability to other ethnic, religious, or geographical populations in Nigeria. The predominance of Hausa-Muslim participants, while providing focused cultural analysis, means findings may not apply to the diverse Christian and animist communities in southern Nigeria or to Hausa communities in other regions. Second, the use of a single diagnostic instrument, though adapted and validated, may not capture all cultural nuances of depression. Third, the qualitative component relied on caregiver and teacher reports, which, while valuable, are subjective and may be influenced by social desirability biases or recall limitations. Fourth, the cross-sectional design precludes examination of temporal relationships between variables or tracking of depression course over time. Fifth, the relatively small sample size for quantitative analysis, while adequately powered for the primary objectives, limits the precision of subgroup analyses and the detection of smaller effect sizes.

Despite these limitations, the study provides valuable insights into an under-researched population and offers concrete directions for culturally competent mental health service development in Northern Nigeria and similar contexts.

CONCLUSION

The study revealed a substantial burden of depressive disorder (19.5%) among children with intellectual disability in Sokoto and highlighted the influence of socioeconomic disadvantage, low parental education, and gendered cultural expectations. Female gender emerged as a significant predictor of depression, while IQ level showed no association, underscoring the importance of psychosocial and environmental factors over severity of cognitive impairment. Compared with lower rates reported in high-income contexts such as the Netherlands (e.g., Dekker and Koot), the findings reflected the compounded vulnerabilities present in low-resource settings.

Qualitative findings further demonstrated that depression was primarily expressed through somatic complaints, behavioral changes, and regression, and was interpreted within Islamic spiritual frameworks such as divine will (Kaddara) and spiritual attack (Sihir/Tsoro). These culturally embedded explanatory models shaped recognition and help-seeking patterns. Overall, the study underscored the need for culturally sensitive screening, clinician training in behavioral equivalents of depression (as outlined in the Diagnostic Manual-Intellectual Disability), and integrated community-based mental health approaches in Northern Nigeria.

RECOMMENDATIONS

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

1. Federal and State Ministries of Health, postgraduate medical colleges, and health training institutions in Northern Nigeria should develop and implement structured training modules on cultural psychiatry and the assessment of depression in children with intellectual disabilities for doctors, nurses, and community health officers, with emphasis on recognition of somatic and behavioral presentations and application of the Diagnostic Manual–Intellectual Disability guidelines in culturally responsive practice.

2. Academic institutions, child mental health researchers, and primary healthcare development agencies should develop and validate brief, culturally adapted screening tools that incorporate local idioms of distress such as *rashin lafiya* and observable behavioural indicators, ensuring usability by non-specialist workers in line with the World Health Organization's mhGAP framework.

3. State Ministries of Religious Affairs, Islamic councils, and community-based organizations should establish formal and informal dialogue platforms with *Mallams* and Imams to foster shared understanding of child mental health, reduce stigma, and create bidirectional referral pathways between spiritual and biomedical systems.

4. State health promotion units, media agencies, and local government authorities should design and disseminate culturally sensitive public health messages on child mental health through mosques, community forums, and radio platforms, integrating spiritual and biomedical perspectives.

5. Primary healthcare boards and Ministries of Education should integrate mental health services for children with intellectual disabilities into existing primary care and special education systems, including training teachers to recognize and refer suspected cases

6. Ministries of Women Affairs, social welfare departments, and disability-focused NGOs should design targeted interventions for girls with intellectual disabilities, including girl-focused support initiatives and family outreach programs that address gender-specific stressors and vulnerabilities to depression.

7. Universities, research institutes, and funding agencies such as TETFund should support multi-site and longitudinal studies across diverse Nigerian settings to enhance generalizability and evaluate culturally adapted psychosocial and family-based interventions for depression in children with intellectual disabilities.

8. Federal and State policymakers, including legislative health committees, should advocate for the explicit inclusion of child mental health and disability-focused services within national and state mental health strategies, promoting culturally competent care and structured collaboration with traditional and religious healers in alignment with the World Health Organization mhGAP recommendations.

ACKNOWLEDGMENTS

The researchers thank the management, staff, parents, and students of A.A. Raji Special School, Sokoto, for their participation and cooperation. Appreciation is also extended to the research assistants and community informants who facilitated this work.

REFERENCES

Abbo, C. (2011). Profiles and outcome of traditional healing practices for severe mental illnesses in two districts of Eastern Uganda. Global Health Action, *4*(1), 7117. https://doi.org/10.3402/gha.v4i0.7117

Adewuya, A. O., & Makanjuola, R. O. A. (2008). Social distance towards people with mental illness amongst Nigerian university students. *Social Psychiatry and Psychiatric Epidemiology*, 43(11), 871-876. https://doi.org/10.1007/s00127-008-0384-3

Abubakar, A.A., Adedokun B., Omigbodun O. (2017). A comparative study of the prevalence and correlates of psychiatric disorders in Almajiris and public primary school pupils in Zaria, Northwest Nigeria. *Child Adolescent Psychiatry Mental Health.* doi: 10.1186/s13034-017-0166-3. PMID: 28596800; PMCID: PMC5463351.

Barke, A., Nyarko, S., & Klecha, D. (2011). The stigma of mental illness in Southern Ghana: Attitudes of the urban population and patients' views. Social Psychiatry and Psychiatric Epidemiology, *46*(11), 1191-1202. https://doi.org/10.1007/s00127-010-0290-3

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

Dekker, M. C., & Koot, H. M. (2003). DSM-IV disorders in children with borderline to moderate intellectual disability. I: Prevalence and impact. Journal of the American Academy of Child & Adolescent Psychiatry, *42*(8), 915-922. https://doi.org/10.1097/01.CHI.0000046892.27264.1A

Fletcher, R., Loschen, E., Stavrakaki, C., & First, M. (Eds.). (2007). Diagnostic manual-intellectual disability (DM-ID): A textbook of diagnosis of mental disorders in persons with intellectual disability. NADD Press.

Hurley, A. D. (2003). Depression in adults with intellectual disability: Symptoms and challenging behaviour. Journal of Intellectual Disability Research, *47*(Pt 4-5), 217-222. https://doi.org/10.1046/j.1365-2788.2003.00482.x

Kaufman, J., Birmaher, B., Brent, D., Rao, U., Flynn, C., Moreci, P., Williamson, D., & Ryan, N. (1997). Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime Version (K-SADS-PL): Initial reliability and validity data. Journal of the American Academy of Child & Adolescent Psychiatry, *36*(7), 980-988. https://doi.org/10.1097/00004583-199707000-00021

Kleinman, A. (2004). Culture and depression. *New England Journal of Medicine*, 351(10), 951-953. https://doi.org/10.1056/NEJMp048078

Ostien, P. (2009). A study of the Sharia implementation in northern Nigeria, 1999-2006. Spectrum Books.

Sorsdahl, K., Stein, D. J., Grimsrud, A., Seedat, S., Flisher, A. J., Williams, D. R., & Myer, L. (2010). Traditional healers in the treatment of common mental disorders in South Africa. Journal of Nervous and Mental Disease, *198* (6), 434-441. https://doi.org/10.1097/NMD.0b013e3181e0770b

van der Zeijst, M. C., Veling, W., Makhathini, E. M., Susser, E., & Burns, J. K. (2021). Explanatory models of psychosis amongst community health workers in South Africa. *International* Journal of Social Psychiatry, *67*(3), 246-254. https://doi.org/10.1177/0020764020945098

Weiss, M. G. (1997). Explanatory Model Interview Catalogue (EMIC): Framework for comparative study of illness. *Transcultural Psychiatry*, 34(2), 235-263. https://doi.org/10.1177/136346159703400204

World Health Organization. (2017). Depression and other common mental disorders: Global health estimates. World Health Organization. https://apps.who.int/iris/handle/10665/254610

American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). https://doi.org/10.1176/appi.books.9780890425596

World Health Organization. (2019). *Depression*. https://www.who.int/news-room/fact-sheets/detail/depression