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BEHAVIOURAL PATTERNS OF CHILDREN IN KADUNA STATE ORPHANAGES: A COMPARATIVE ANALYSIS

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Abstract

Background: - The plight of orphans, exacerbated by conflict, disease, and socioeconomic factors, remains a pressing global issue, particularly in sub-Saharan Africa. Nigeria, notably impacted by the HIV/AIDS epidemic, terrorism, and natural disasters, has witnessed a substantial increase in orphan populations. These children face severe challenges, including child abuse, malnutrition, limited access to education, stigmatization, and a range of psychological and behavioral disorders. Despite some interventions, orphanages primarily address material needs, often neglecting comprehensive medical, social, and psychosocial support. This study explores the behavioral patterns of orphans in Kaduna, Nigeria, and examines how their medical and social challenges compare across various orphanages.

Methodology: - A cross-sectional, comparative analysis was conducted among 100 orphans from selected orphanages in Kaduna. Data were collected through interviewer-administered questionnaires assessing socio-demographics, medical conditions, behavioral patterns, stigma, psychosocial status, and coping strategies.

Results: - The mean age of respondents was 10 years, with 68% being male. Nutritional issues were prevalent, with 53.7% classified as underweight despite 54.9% reportedly consuming balanced diets. Medical concerns were significant, with 33.7% showing clinical signs of illness and 46.7% not fully immunized. Behavioral issues were prominent, including hyperactivity symptoms (27.0%), enuresis (22.3%), and depressive symptoms (1.8%). Socially, most respondents (83.3%) reported positive peer relationships, though bullying (11.4%) and stigmatization (9%) were also observed. Educational access was generally high, with only 2.2% not attending school. However, social support systems varied, with 35.2% reporting strong support and 46.8% adapting their goals as a coping mechanism.

Conclusion: - The findings highlight the complex medical and behavioral challenges faced by orphans in Kaduna's orphanages, underscoring the need for integrated interventions that provide medical, psychosocial, and educational support. A holistic approach is crucial to improving their overall well-being and future prospects.

Keywords Behavioral patterns, orphans, Kaduna, Nigeria, orphanages, medical challenges, psychosocial support, stigma, child health.

INTRODUCTION

Life presents a series of opportunities and challenges, and for children in orphanages, these challenges are often magnified by the absence of parental care and the constraints of institutional settings. Orphanages are institutions that provide support for children who have lost one or both parents, or whose families are unable to care for them due to socio-economic hardships, conflicts, or other forms of dysfunction (Mahmood, Ullah and Sha, 2020; Frimpong-Manso, 2021; Yuka and Omorogiuwa, 2024). While the purpose of these institutions is to offer shelter, education, medical care, and emotional support, the reality for many orphaned children is often far from ideal. The behavioural patterns of children residing in orphanages are shaped by multiple factors, including the trauma of losing their parents, the often-harsh institutional environment, and the lack of consistent, individualized care. In many cases, these experiences contribute to significant behavioural challenges that distinguish these children from their peers living in family settings.

The phenomenon of orphanages has a long history, but the situation of orphans in sub-Saharan Africa has become increasingly dire in recent decades. In Nigeria, the orphan crisis has been exacerbated by

regional conflicts, poverty, and the HIV/AIDS pandemic. According to UNICEF, as of 2020, over 17 million orphans were recorded in Nigeria, many of them concentrated in states such as Kaduna, where the effects of poverty and conflict have worsened their plight (UNICEF, 2020). These children face not only the physical challenges of poor health and malnutrition (Soyobi, Obohwemu, and Suberu, 2024) but also deep emotional and psychological scars that manifest in a range of behavioural issues. Orphaned and vulnerable children (OVCs) are particularly susceptible to mental health problems, including anxiety, depression, aggression, and attachment disorders, which significantly influence their behavioural patterns (Mugisha et al., 2018; Kibachio and Mutie, 2020).

Children in orphanages often exhibit behavioural patterns that reflect the complex interplay between their past trauma and their current environment. Studies have shown that children who lose one or both parents are at a higher risk of developing behavioural issues, as they grapple with the emotional impact of their loss, alongside the challenges posed by institutional living. For instance, many children in orphanages have trouble forming healthy attachments with caregivers, which can lead to behavioural issues such as withdrawal, aggression, or hyperactivity (Aliyu et al., 2018). The lack of consistent emotional support and the high caregiver-to-child ratio in many orphanages make it difficult for children to develop secure attachments, which are essential for healthy emotional and social development (Pryce et al., 2020).

The institutional environment of orphanages can further exacerbate these behavioural issues. In many orphanages, resources are limited, and caregivers are often overburdened, leading to a lack of individualized attention for each child (Soyobi, Obohwemu, and Suberu, 2024). This environment can foster feelings of neglect and abandonment, which may manifest as behavioural problems. Children may act out in an attempt to gain attention or may become withdrawn and emotionally detached. Studies have indicated that children in orphanages are more likely to exhibit behavioural problems such as aggression, defiance, and oppositional behavior than their peers in family settings (Bakermans-Kranenburg et al., 2011). These behavioural patterns are often a coping mechanism in response to the trauma and stress associated with their environment.

In addition to the emotional and psychological challenges, children in orphanages often struggle with developmental delays that can further influence their behavior. Many children in institutional care lack access to early childhood education and developmental support, which can result in cognitive and behavioural deficits. Research has shown that children in orphanages are at higher risk of developmental delays, including language and social-emotional development, which can contribute to difficulties in communication and social interactions (Nelson et al., 2014). These delays often lead to frustration and behavioural outbursts, as children struggle to navigate social situations and express their needs effectively.

The social dynamics within orphanages also play a significant role in shaping children's behavior. In many orphanages, children are raised in group settings, where competition for resources, attention, and affection is common. This competitive environment can lead to behavioural issues such as bullying, aggression, and social isolation. Studies have shown that children in institutional settings are more likely to engage in aggressive behaviors, as they attempt to assert dominance or cope with feelings of insecurity (Sonderman, 2023; Ozanne et al., 2024). The lack of stable, nurturing relationships with caregivers

can also hinder children's ability to develop healthy social skills, leading to difficulties in forming friendships and navigating social interactions outside the orphanage setting.

The impact of trauma on the behavioural patterns of children in orphanages cannot be overstated. Many children in orphanages have experienced multiple forms of trauma, including the loss of parents, exposure to violence, and neglect. This trauma can have lasting effects on their emotional and behavioural development, contributing to issues such as post-traumatic stress disorder (PTSD), anxiety, and depression. These mental health challenges often manifest in behavioural problems, including aggression, withdrawal, and difficulty regulating emotions (Alem, 2020; Thulin et al., 2022; Wambui, Njeru and Menacha, 2023). Children who have experienced trauma may also exhibit hypervigilance, a heightened state of awareness that can lead to difficulty concentrating, restlessness, and impulsivity (Cicchetti, 2013).

The behavioural challenges faced by children in orphanages are further compounded by the lack of access to mental health services. In many orphanages, there are no trained mental health professionals available to address the psychological needs of the children. This lack of support can result in untreated mental health issues, which may worsen over time and lead to more severe behavioural problems. Research has shown that children in institutional care who do not receive appropriate mental health interventions are more likely to experience long-term emotional and behavioural difficulties, including increased risk of substance abuse, criminal behavior, and poor educational outcomes (Zeanah et al., 2011).

Despite these challenges, there is growing recognition of the need to address the behavioural and emotional needs of children in orphanages. International organizations such as UNICEF and the World Health Organization (WHO) have emphasized the importance of providing comprehensive care that includes not only physical health but also emotional and psychological support for children in institutional settings (UNICEF, 2020; WHO, 2024). Interventions such as trauma-informed care, attachment-based therapies, and social-emotional learning programs have been shown to be effective in improving the behavioural outcomes of children in orphanages. These interventions focus on helping children develop healthy attachments, cope with trauma, and improve their emotional regulation skills (Zhang et al., 2021; Miller, 2022; Dennis, 2024).

The behavioural patterns of children in orphanages are shaped by a complex interplay of factors, including trauma, institutional environment, and social dynamics. These children face significant emotional and psychological challenges, which often manifest in behavioural problems such as aggression, withdrawal, and difficulty forming healthy attachments. The lack of individualized care, developmental support, and mental health services in orphanages exacerbates these issues, leading to long-term difficulties in social and emotional development. Addressing the behavioural needs of children in orphanages requires a comprehensive approach that includes trauma-informed care, attachment-based therapies, and social-emotional learning programs.

In Nigeria, the behavioural patterns of children in orphanages have received relatively little attention in research, despite the significant number of OVCs in the country. Kaduna State, in particular, has seen a dramatic increase in the number of orphaned children due to regional conflicts, poverty, and disease (Aliyu et al., 2018). Understanding the behavioural challenges faced by these children is critical for developing effective interventions that can improve their well-being and help them reach

their full potential. This study seeks to fill this gap by conducting a comparative analysis of the behavioural patterns of children in orphanages in Kaduna State. By examining the factors that contribute to these behavioural patterns, including trauma, institutional environment, and social dynamics, this research aims to provide valuable insights into the unique challenges faced by children in orphanages and to identify strategies for improving their behavioural outcomes. By understanding the behavioural patterns of children in orphanages, policymakers, caregivers, and mental health professionals can develop targeted interventions that improve the well-being of some of the most vulnerable members of society.

METHODOLOGY

Information on Study Area

Kaduna State, located in Nigeria's northwestern geopolitical zone, plays a key role in the nation's economy. The capital city, Kaduna, is a major urban center alongside Zaria and Kafanchan. Geographically, Kaduna lies on the Kaduna River and spans an area of 3,080 square kilometers (1,190 square miles) with coordinates of 10°31'23"N and 7°26'25"E. Over 60 ethnic groups, including the Gbayi, Hausa, Fulani, Gwong, Atuku, Bajju, Atyab, Gure, and Ninkyop, populate the state, making it ethnically diverse (Yakubu, 2006; Nigeria Demographic Profile, 2021). As a key economic hub in northern Nigeria, Kaduna is a trade and transportation center that connects agricultural regions to other states (Udo, 2023).

Research Sites

- Adonai Orphanage Home: Established on April 10, 2010, by Reverend Mrs. Elizabeth Afuape, Adonai Orphanage is a faith-based, non-profit, non-governmental organization located at 1B Chalawa Crescent, Banawa, opposite Dambo International School, Kaduna South (Nigerian NGO Directory, 2012).
- Mercy Orphanage Home: Founded by Reverend Dr. Tunde Balanta on November 24, 2001, Mercy Orphanage Home is another faith-based, non-governmental, non-profit organization located at 12-14 Kagoro Close, Ungwan Romi, Chikun, Kaduna South (Kareem, 2015).
- Jammiyyr Matan Arewa Orphanage Home: This organization, established on May 27, 1963, serves as a social organization for Northern women, providing a platform for women's welfare and supporting orphans (Jammiyyr Matan Arewa, 2017).

Study Design

The research adopted a cross-sectional descriptive study design, which is commonly used to evaluate the prevalence of certain characteristics in a population at a specific point in time (Wang and Cheng, 2020).

Study Population

The study population comprised orphanages located in Kaduna State.

Inclusion Criteria

- Children under 19 years of age residing in any of the orphanages in Kaduna were included in the study (WHO, 2016).

Exclusion Criteria

- Children above 18 years of age or those unwilling or unable to participate due to mental or emotional states were excluded from the research (Field, 2005).

Sample Size Determination

The sample size was determined using the formula:

$$n = z^2pq/d^2$$

Where n=minimum sample size required, p=0.207[27], q=1-p (=0.793), z=the value of standard normal deviation taken to be 1.96(at 95% confidence interval), d=sampling error tolerance at 95% confidence interval taken to be 0.05 (5%).

$n=1.96^2x0.207x0.793/0.05^2$

n=0.631/0.0025=252.2

Therefore, minimum sample size required N=252.2

However, the final sample size for a population less than 10,000 ($n_f=n/(1+(n/N))$

n=Initial sample size

N=Estimated population of the study area

n_f =Final sample size

n=252.2

N=120

$n_{f=}$ 252.2/ (1+ (252.2/120)

$n_{f=}$ 81.3

This resulted in a final sample size of 90, after factoring in a 10% non-response rate (Bartlett et al., 2001).

Sampling Technique

The study used a two-stage sampling technique:

1. In the first stage, three orphanages were randomly selected from the seven total orphanages in Kaduna.

2. In the second stage, all children meeting the inclusion criteria were sampled from the selected orphanages.

For instance, Mercy Orphanage had 46 children, of whom 40 met the criteria. In Adonai Orphanage, all 46 children were eligible, and in Jammiyyr Matan Arewa, all 14 children were sampled (Umar & Adegboye, 2018).

Tools of Data Collection

A questionnaire was administered to assess the socio-medical issues faced by children in orphanages. Some responses were provided by caregivers. Additional tools included:

Mid Upper Arm Circumference (MUAC)

MUAC, first proposed by Shakir (1975), is a method used to assess malnutrition in children. A measurement of less than 11 cm indicates severe acute malnutrition, while measurements between 11 and 12.5 cm suggest moderate acute malnutrition. Measurements between 12.5 and 13.5 cm indicate risk, and values above 13.5 cm suggest adequate nourishment (WHO, 2017).

Weighing Scale for BMI

Body Mass Index (BMI) is calculated by dividing an individual's weight in kilograms by the square of their height in meters. It helps to assess nutritional status:

- Underweight: BMI <18.5 kg/m^2,
- Normal: 18.5 to 24.99 kg/m^2,
- Overweight: 25 to 29.99 kg/m^2,
- Obese: ≥30 kg/m^2.

Rosenberg Self-Esteem Scale (RSES)

The RSES, developed by Morris Rosenberg in 1965, is a widely used tool for measuring self-esteem. It uses a 10-item Likert scale, where higher scores indicate higher self-esteem (Rosenberg, 1965). Scores between 15 and 25 are within the normal range, while scores below 15 indicate low self-esteem (Mann et al., 2004).

Duke-UNC Functional Social Support Questionnaire (FSSQ)

The FSSQ, developed by Broadhead et al. (1988), measures perceived social support. Responses are scored on a scale of 1 to 5, with higher average scores indicating greater perceived support (Broadhead et al., 1988).

Hyperactivity/Impulsivity Symptoms and Major Depressive Disorder

Both conditions were assessed using the DSM-IV criteria. A score of 60% or higher on the respective scales indicated a diagnosis of either condition (American Psychiatric Association, 2000).

Method of Data Collection

Six trained research assistants (five 500-level medical students and one 600-level medical student) administered the questionnaires. Data collection was conducted over three Saturdays, with an average of 30 respondents interviewed each day (Akanbi et al., 2019).

Data Management and Analysis

Data were manually verified for accuracy before being entered into SPSS version 20.0 for analysis. Descriptive statistics were used to summarize demographic data, and cross-tabulation was performed to assess relationships between variables. Results were presented in tables and charts, and compared with findings from similar studies (Pallant, 2020).

Ethical Considerations

1. A letter of introduction was obtained from the Department of Community Medicine, Faculty of Medicine, ABU Zaria, and presented to the directors of the orphanages, who granted permission to conduct the study.
2. Informed consent was obtained from eligible participants or their caregivers (Council for International Organizations of Medical Sciences, 2016).

Limitations of the Study

1. The study only included three orphanages due to time and resource constraints.
2. Additional variables like Mantoux tests and vitamin A levels could not be included due to logistical challenges (Akanbi et al., 2019).
3. The study's cross-sectional design presents a limitation, as it captures knowledge and skills at a single point in time (December 2016), potentially missing changes that may have occurred since then. Consequently, caution is needed when interpreting these findings in the current context, as shifts in healthcare policies, ongoing training programs, or variations in resource availability may have impacted healthcare workers' knowledge and skills over the years. Moreover, the reliance on self-reported data to assess knowledge, rather than direct observation of clinical practice, introduces potential bias. Respondents may either overestimate their competencies or fail to fully disclose their limitations, which could skew the results.

RESULTS

A total of 110 questionnaire was administered to assess the medico-social problems of children living in orphanages in Kaduna. A total of 100 questionnaires were retrieved with a response rate of 91%.

Socio-demographic information of orphans living in orphanages in Kaduna

Table 1: Socio-demographic characteristics of respondents

Socio-demographic characteristics of respondents	Frequency (n=100)	Percentage (%)
Age (in years)		
0-4	8	18.0
5-9	26	16.0
10-14	41	41.0
15-19	25	25.0
Total	**100**	**100.0**
Sex		
Male	68	68.0
Female	32	32.0
Total	**100**	**100.0**
Ethnicity		
Hausa	41	41.0
Yoruba	30	30.0
Igbo	10	10.0
Birom	8	8.0
Others	11	11.0
Total	**100**	**100.0**
Religion		
Islam	14	14.0
Christianity	86	86.0
Total	**100**	**100.0**

The table 1 above showed that the age group of respondents 10-14years have the highest percentage (41%) while age group 0-4years has the least percentage of respondents (8%). There are more males (68%) than female (32%) respondents. The predominant tribe is Hausa (41%), followed by Yoruba (30%). Others include Baju, Ebira, Idoma, etc. There are more Christian (86%) than Muslim (14%) respondents.

Prevalence of Common Medical Problems among Orphans in Orphanages in Kaduna

Table 2: Physical well-being of respondents

Variables	All the time [n (%)]	Most of the time [n (%)]	More than half of the time [n (%)]	Less than half of the time [n (%)]	Some of the time [n (%)]	At no time [n (%)]	Total [n (%)]
I feel well and energetic	34(39.1)	35(40.2)	8(9.2)	8(9.2)	2(2.3)	-	100(100)
I feel physically fit to do anything I want	31(35.6)	35(40.2)	10(11.5)	10(11.5)	1(1.1)	-	100(100)
I am comfortable about my weight, shape and physical condition	41(48.8)	29(34.5)	11(13.1)	1(1.2)	1(1.2)	1(1.2)	100(100)
I do get all the sleep I need	37(44.0)	20(23.8)	20(23.8)	4(4.8)	3(3.6)	-	100(100)
I am free from unexplained physical health symptoms	29(35.8)	14(17.3)	11(13.6)	2(2.5)	23(28.4)	2(2.5)	100(100)
I woke up feeling fresh and rested	41(50.0)	18(22.0)	12(14.6)	3(3.7)	6(7.3)	2(2.4)	100(100)
My daily life has been filled with things that interest me	23(28.4)	29(35.8)	23(28.4)	5(6.2)	1(1.2)	-	100(100)
I eat good balanced diet daily	45(54.9)	20(24.4)	7(8.5)	2(2.4)	8(9.8)	-	100(100)
I feel calm and relax	30(36.6)	30(36.6)	14(17.1)	2(2.4)	6(7.3)	-	100(100)
I usually visit hospital for treatment	41(50.0)	15(18.3)	11(13.4)	7(8.5)	8(9.8)	-	100(100)
I do get all I need anytime the need arise	15(18.3)	15(18.3)	26(31.7)	10(12.2)	11(13.4)	5(6.1)	100(100)
I eat what I want and not what I see	14(17.1)	13(15.9)	11(13.4)	8(7.3)	14(17.1)	24(29.3)	100(100)

From the above table, result shows that a high percentage of respondent felt well and energetic all the time (39.1), most of the time (40.2) and none (0%) none of the time. This implies that about 80% feel well and energetic and approximately 90% feel physically fit and comfortable with their weight, shape and physical condition. About 46.4% of them eat what they want while majority (55.6%) eat what they see rather than what they want, majority (83.3%) eat balanced diet likewise 81.7% visit the hospital whenever they are ill.

Table 3: Body mass index and mid upper arm circumference of respondents

Body mass index and MUAC of respondents	Frequency (n=95)	Percentage (%)
BMI		
Underweight	51	53.7
Normal weight	35	36.8
Overweight	4	4.2
Obese	5	5.3
Total	**95**	**100.0**
MUAC (cm)		
<11.0	2	28.6
11.0-12.5	2	28.6
12.5-13.5	1	14.3
>13.5	2	28.6
Total	**7**	**100.0**

From the table above, more than half (53.7%) of the children are underweight while 36.8% weigh within normal and 5.3% are obese. Less than half (28.6%) of respondents have severe acute malnutrition, 28.8% also have moderate acute malnutrition, 14.3% is at risk of malnutrition and 28.6% of the respondents are well nourished.

Table 4: Clinical examination result of respondents

Signs and symptoms/Age group	0-4(n=8)	5-9(n=26)	10-14(n=40)	15-18(n=25)	Total(n=95)
De-pigmentation of hair	-	-	2	1	3
Muscle wasting	-	-	-	-	-
Moon face	-	-	-	1	1
Flaky paint dermatitis	-	-	-	-	-
Oedema	-	-			
Bitot spot	-	-	-	2	2
Conjuctival xerosis	-	-	-	1	1
Xerosis of the skin	-	-	-	-	-
Cheilosis	1	1	1	-	3
Magenta tongue	-	-	1	1	2
Loss of ankle and knee jerk	-	-	-	-	-
Atrophic lingual papillae	-	1	-	-	1
Spongy bleeding tongue	-	-	-	1	1
Open fontanella	-	-	-	-	-

Bow leg	1	-	-	1	2
Knock knee		3	1	2	6
Pale conjunctival	1	1	2	1	5
Enlarged thyroid gland	-	-	-	-	-
Mottled dental enamel	1	1	1	2	5
Total [n (%)]	4	7	8	13	32 (33.7)

66.3% of the respondents had no physical signs on clinical examination while 33.7% of the respondent do.

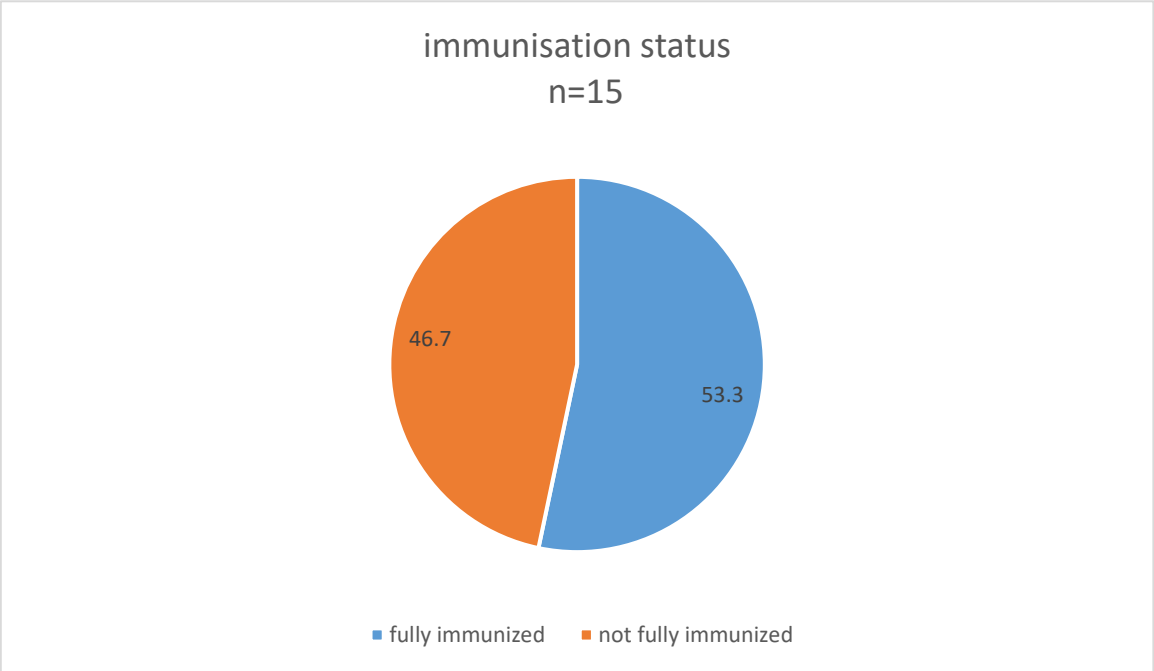

Figure 1: Immunization status of respondents

The number of respondents that are fully immunized (53.3) were slightly higher than those that were not fully immunized (46.7%).

Table 5: Frequency distribution of respondents with BCG scar and the immunization card seen

Number of immunization card seen and presence of BCG scar on respondents among under-fives	Frequency (n=8)	Percentage (%)
Number of immunization card seen	7	87.5
Presence of BCG scar	5	62.5

Table 5 above showed that 87.5% of the under-five's immunization card were seen and 62.5% of them have BCG scar.

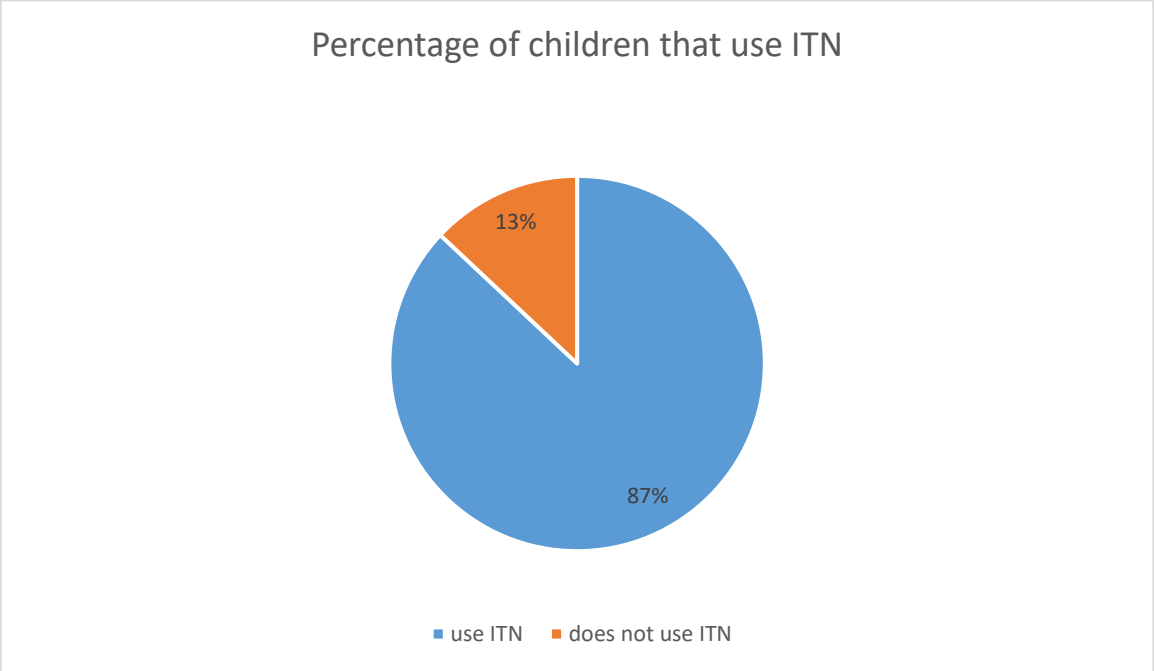

Figure 2: Frequency distribution of children that sleep under ITN

Figure 2 above showed that 87% of the respondents sleep under insecticide treated net.

4.3 Behavioural patterns of orphans living in orphanages in Kaduna

Table 6: Behavioural patterns of orphans in orphanages in Kaduna

Behavioural patterns of respondents	Frequency (n=85)	Percentage (%)
Hyperactivity/impulsivity symptoms		
Present	23	27
Absent	62	73
Total	**85**	**100.0**
Major depressive disorder		
Present	1	1.8
Absent	84	98.2
Total	**85**	**100.0**
Enuresis		
5-9years	2	12.5

10-14years	4	9.8
Total	**6**	**22.3**
Tic disorders		
Present	-	
Absent	85	100
Total	**85**	**100**

Table 6 above showed that 27% of respondents have hypersensitivity/impulsivity disorder, 1.8% are suffering from major depressive disorder, 22.3% have enuresis with age group 5-9years being majority (12.5%) and none of the respondents has tic disorders.

DISCUSSION

The behavioural patterns observed in orphaned children in Kaduna State orphanages reflect both the shared and distinctive influences of their socio-cultural environment, educational access, and health status, as well as the psychological effects of orphanhood. These findings are crucial in understanding how these children's developmental trajectories align with and differ from those reported in other studies on orphan populations globally.

The age distribution, with the majority of respondents between the ages of 10-14 years, is consistent with previous research in orphanages across Nigeria and other parts of the world. A study conducted in Ogun State found that most orphans were within a similar age bracket, though the gender distribution in the Kaduna study revealed a significantly higher proportion of male respondents (68%) compared to female respondents (32%) (Folarin & Bello, 2016). The underrepresentation of females may reflect cultural norms around gender roles in northern Nigeria, where male children may be more likely to be enrolled in institutional care due to the preference for males to receive formal education or social services (Adejumo et al., 2017). This is also consistent with findings from rural China, where there is a slight predominance of males in orphanage populations (Zhang et al., 2019).

One notable finding from the study is the predominance of the Hausa ethnic group (41.0%) among the respondents, which reflects the ethnic composition of Kaduna State. The education levels of the respondents, with most children having attained primary education (57%) followed by junior secondary school (26.7%), are comparable to findings in western Nigeria, where a majority of orphaned children also had primary-level education (Adejumo et al., 2017). However, despite these similarities, the low percentage of children with education beyond junior secondary school highlights the challenges that orphanages face in providing continuous education, which has implications for the children's future opportunities and socioeconomic mobility. This aligns with the conclusions of research in South Africa, where institutionalized children often experience disruptions in their educational progression due to systemic inadequacies in orphanage facilities (Cluver et al., 2012).

Physical health was another key area of interest in this study. The reported high levels of physical well-being, where 40.2% of the children felt energetic most of the time, closely mirror findings from studies conducted in other Nigerian states (Folarin & Bello, 2016). However, slight variations exist when compared to the Ogun State study, where a higher percentage of children reported feeling well and energetic all the time (60.9%).

These differences may reflect variations in the quality of care and resources available to children in different orphanage systems. For instance, orphanages in urban areas such as those in Ogun State may have better access to healthcare services, nutrition, and recreational activities compared to those in more rural or less affluent regions like Kaduna (Oladokun et al., 2016a).

Malnutrition, a common issue among orphans in low-resource settings, remains a concern in Kaduna orphanages. The prevalence of underweight children (53.7%) in this study is significantly higher than what has been reported in orphanages in other parts of Nigeria, such as Imo State, where only 19% of the children were underweight (Nwafor et al., 2018). This disparity may be attributed to differences in the economic capacity of orphanages and the availability of government or NGO support for nutritional programs. The findings in Kaduna are more comparable to those in rural Ethiopia, where orphaned children are similarly vulnerable to poor nutritional outcomes due to limited access to adequate food supplies (Belay & Deribew, 2019).

Mental health concerns, particularly behavioural disorders, are a significant aspect of the study. The prevalence of hyperactivity/impulsivity symptoms (27%) aligns with findings from orphanages in Cairo, where 19.62% of children were diagnosed with similar conditions (Mohamed et al., 2017). This suggests that children in institutional care settings are particularly susceptible to such disorders, possibly due to the absence of stable familial environments, inadequate emotional support, or trauma related to parental loss (Patel et al., 2019). The lower incidence of major depressive disorder (1.8%) compared to studies in Cairo and India, where rates were 7.17% and 25%, respectively, raises questions about the variability of depressive symptoms across different cultural and environmental contexts (Mohamed et al., 2017). It is possible that the supportive peer relationships reported by a majority of the respondents (83.3%) serve as a buffer against severe depressive symptoms, as positive social interactions have been shown to mitigate the negative psychological effects of orphanhood (Cluver et al., 2012).

Peer relationships and social integration are pivotal to the emotional and social development of orphaned children. The study reports that 83.1% of respondents relate well with their peers, and 83.3% stated that their peers relate well with them. This finding is consistent with a study conducted in South Africa, where 70% of children in orphanages reported positive peer relationships (Cluver et al., 2012). However, the fact that 11.4% of respondents experienced bullying and 9% felt ostracized highlights the ongoing challenges of social integration within orphanages. These social stressors, although less pronounced than in some studies, such as the South African study where 30% of children reported feeling ostracized, nonetheless emphasize the need for interventions aimed at fostering inclusive and supportive peer environments (Cluver et al., 2012).

Self-esteem is another crucial behavioural indicator of psychological well-being. The majority of respondents (89.2%) reported having good self-esteem, with males showing a significantly higher percentage (60.5%) than females (27.7%). This finding diverges from research conducted in Ogun State, where females exhibited higher self-esteem levels than males (Olaniyi et al., 2016). This gender difference in self-esteem may be culturally rooted, as northern Nigerian society tends to place greater emphasis on male achievement and autonomy, which could boost self-esteem in male children. On the other hand, females may experience more restricted roles and opportunities, contributing to lower self-esteem. These patterns mirror findings from studies in other patriarchal societies, such as

in India, where girls in institutional care often report lower self-esteem due to societal norms that devalue their roles (Patel et al., 2019).

Coping mechanisms are a vital aspect of behavioural patterns, especially in orphan populations. The study revealed that more than half (64.6%) of the respondents employed coping strategies to manage their situations, although a significant proportion exhibited negative coping methods, such as distancing themselves from their problems (53.8%) or making efforts to forget their situations (50.6%). This is similar to findings from Ethiopia, where orphaned children demonstrated lower resilience scores and often resorted to maladaptive coping strategies (Belay & Deribew, 2019). The prevalence of negative coping mechanisms underscores the importance of providing psychosocial support within orphanage settings to foster healthier coping strategies. The provision of counseling services and resilience training could help mitigate the long-term psychological impact of orphanhood.

The educational outcomes of the respondents were generally positive, with 97.8% attending school and 87.7% receiving formal Western education. This is consistent with studies from other parts of Nigeria, such as Abuja and Ogun State, where near-universal school attendance among orphans has been reported (Oladokun et al., 2016b). The strong emphasis on education in these settings reflects the understanding that education is a crucial tool for breaking the cycle of poverty and ensuring better future prospects for orphaned children. However, the relatively lower percentage of children attending junior secondary school suggests that there may be barriers to continued education beyond the primary level, possibly due to financial constraints or limited capacity within orphanage systems to support higher education.

In essence, the behavioural patterns of children in Kaduna State orphanages reveal a complex interplay of factors influencing their development. While there are positive aspects, such as strong peer relationships and good educational access, challenges remain in areas such as mental health, nutrition, and coping strategies. The findings align with broader research on orphan populations, but also highlight specific contextual factors unique to the socio-cultural environment of northern Nigeria. Addressing these challenges through targeted interventions, including mental health support, improved nutritional programs, and resilience training, is crucial for fostering the long-term well-being of these vulnerable children.

CONCLUSION

This study underscores the significant prevalence of behavioural disorders among children in orphanages in Kaduna State, Nigeria. High rates of hyperactivity and enuresis reflect underlying psychological and emotional issues that require urgent attention. Poor self-esteem is also prevalent, highlighting the need for comprehensive psychosocial support. Despite these challenges, most children have access to formal education and perform well academically, suggesting resilience and potential for positive outcomes. Contrary to common assumptions, the majority report low levels of stigmatization, indicating good social integration, which may aid their emotional resilience and overall well-being. Addressing behavioural issues through targeted interventions is crucial for improving the quality of life for orphans in Kaduna. Ensuring psychological support, along with maintaining access to education and fostering social support systems, is essential for their long-term development and integration into society. Collaborative efforts between government agencies, non-governmental organizations, and the community are necessary to address these multidimensional issues and enhance the well-being of orphans in Kaduna.

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The entire study procedure was conducted with the involvement of all writers.

Conflict of Interest

The authors declare no conflicts of interest.

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