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ASSESSMENT OF EARLY CHILDHOOD CARE AND NUTRITION: ADDRESSING FOOD INSECURITY AND PROMOTING HEALTHY EATING HABITS IN KADUNA STATE

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ABSTRACT :

The study has been carried out in an attempt to examine the evaluation of early childhood care and nutrition: dealing with food insecurity and encouraging healthy eating practices in Kaduna State. The study has derived three research objectives that will; evaluate the state of nutrition among children aged 0 to 5 years, the extent of food insecurity on early childhood care and development and devise evidence-based interventions of enhancing food security and improving healthy eating habits among children in the State of Kaduna. The 285 participants in the sample were selected using stratified random sampling because different categories of respondents were used in each of the selected LGAs so that the opinion of the stakeholders could be well represented. The instrument of data collection was a questionnaire. The results and measures of data gathered in carrying out the study were displayed and discussed through statistical tools such as the mean and standard deviation. It was found out that, the state of the children, who had not yet reached the age of 5 years was stunted (marking the prevalence of the chronic malnutrition cases that was found to be higher than the country-wide average and severe wasting, that had reduced dramatically demonstrating the accomplishments in acute malnutrition management). This has been found to cause physical development and under nourishment of children aged 0 -5 as nutrition in early childhood care and development has been modulated by the effect of food insecurity on the children. The determined findings, the methods to enhance food security and the healthy eating habits among children are to arrange regular nutrition campaigns in communities, schools and health centers to educate the parents about the healthy diets, planning the meals, and how to feed the children properly. The research presented a suggestion that the role of nutrition education among parents and caregivers, especially mothers, living in rural and deprived urban neighbourhoods requires an expansion and also government and non-governmental organizations should design and sponsor nutrition community centres and mum support groupings in villages and in the informal settlements.

Keywords: Early childhood care, Food insecurity, Healthy eating habits, Malnutrition, Nutritional education, School feeding programs

Introduction

Age is the most crucial of all in terms of enabling human beings to grow and develop i.e. the period between infancy and five years of age is known as early childhood. This phase must provide children with proper health care, diet and support of their psychodevelopment in order to reach best possible physical and intellectual growth (UNICEF, 2023; WHO, 2024). Failure to receive proper nutrition during this period may cause irreparable harm, such as stunting, wasting, underweight as well as long-term health effects (Arowolo & Yusuf, 2023; Ibe & Olorunfemi, 2022). The world judgment organization (2023) approximates that more than 45 million children less than five years of age are wasted the world over with Sub-Saharan Africa presenting a major part. Childhood malnutrition in Nigeria persists and especially in Northern states like Kaduna (Hassan et al., 2024).

A state of food insecurity, which is characterized by a persistent absence of adequate and nutritious food, aggravates the poor health outcomes of children (FAO, 2023; Musa & Ibrahim, 2022). Poverty, unemployment, inflation, and changes in food production caused by global climatic changes cause families in many low-income communities to fail to provide their children and families with nutritionally balanced diets (Agbo et al., 2024; Ezeokoli et al., 2023). Kaduna State being very rural and in constant cases having bouts with people in conflict and displacement is especially exposed to food insecurity (Akinwunmi & Bello, 2023; Lawal & Ahmed, 2024). Studies also show that malnourished children and their developmental retards have a higher likelihood of residing in food-insecure households (Jatau et al., 2023).

The healthy dietary lifestyle is also essential in the fight against the consequences of food insecurity and its enduring wellbeing. Nevertheless, culture, nutritional illiteracy, and economic impediments lead to ill dietary habits in most Nigerian households (Okafor et al., 2024). For instance, diets low in fruits, vegetables, and protein sources are common among preschool-aged children, often replaced by carbohydrate-dense but nutrient-poor meals (Ekpo et al., 2023). Parents and caregivers are often unaware of proper child-feeding practices, especially complementary feeding and micronutrient supplementation (Adamu & Sani, 2022; Obiora & Dauda, 2023). These factors collectively compromise the health, learning capacity, and future productivity of affected children.

Even though the Nigerian government and other international organizations have taken certain steps to alleviate the issue of malnutrition such as the National Home-Grown School Feeding Programme and the Basic Health Care Provision Fund, the effect is still disproportionate (FME, 2023; Save the Children, 2024). Lack of sufficient outreach in the community, insufficient finances, and low coordination between the health and education sectors hamper successful implementation (Oyetunde & Musa, 2024). It is clear that existing interventions should be reevaluated and nutrition education should be introduced into early childhood care systems to enhance dietary habits on the household level (Bello & Ajibola, 2022).

In addition, the significance of early childhood care and nutrition is accentuated by Goal 2 (Zero Hunger) and Goal 3 (Good Health and Well-being) of Sustainable Development Goals, the focus of which is on the eradication of malnutrition and the enhancement of health equity (UNDP, 2024; FAO et al., 2023). This is because the body of research is pointing towards the area of integrating the food security strategies and the early childhood development programs to reach the goal of holistic child wellbeing (Umeh & Okeke, 2023). Everything is showing signs of a breakthrough with innovations like fortified school meals, community gardens, and education programs to caregivers (Njoku et al., 2024). The targeted assessment of these practices and policies will help Kaduna State to develop evidence-based interventions.

Hence, the proposed research is aimed at evaluating the situation taking place within the Kaduna State in relation to early childhood care and nutrition with a view on determining the level of food insecurity as well as the enhancement of healthy food habits among the caretakers and the population. This study can help fill the gap by determining obstacles and facilitators of nutritional wellbeing because it can help design policy and practical interventions that encourage both health and development of children in the vulnerable population (Ibrahim & Suleiman, 2023). The research helps to fill a pressing gap in localized study and provides practical information to health, education and social development stakeholders.

Statement of the problem

Early childhood is a sensitive phase in human development as during this phase the gap grows at a high rate and the mind is also advancing. Nevertheless, the problem of malnutrition and poor nutrition and feeding remain a concern affecting millions of Nigerian children especially in the Kaduna State. The level of malnutrition is unnaturally high in spite of national nutrition policies and programs that are meant to correct child health outcomes. The 2023 Multiple Indicator Cluster Survey (MICS) showed that stunting among children under the age of five in Northern Nigeria is over 40 percent, which is the indicator of a health emergency.

This problem is largely contributed during the persistence of food insecurity in most parts of Kaduna State. Poverty, inflation, dispossession caused by communal conflicts, and erratic farming set ups make many of the households unable to afford or get access to adequate quality and nutritious food. This has led to children ending up getting diets that are low in essential nutrients needed in growth and development. Moreover, low level of parental education, cultural beliefs and poor awareness about proper child-feeding procedures add to the problem. The result of these issues is poor dieting, constant sickness, and delay in growth of the children during the early stages.

The research gap of research done particularly in Kaduna State on early childhood nutrition, food access and care provider feeding behavior is a deterrent to provision of context-specific solutions. Available literature is mainly based at the national level without sufficient examination of the local realities, the changing of social dynamics and collapse of policies. Such absence of the local evidence does not allow understanding the effectiveness of the already implemented interventions or suggest any scalable strategies that can correspond to community needs in Kaduna.

There is therefore an urgent need to determine the level of Comprehensive care and nutrition among early childhood care in Kaduna State and moreover, this should focus on the food security and food quality in households, knowledge and feeding practices of caregivers. Such assessment will provide evidence-based insights to inform policy and design community-centered interventions aimed at promoting healthy eating habits, improving child health outcomes, and achieving long-term food security for vulnerable populations in the region.

Research Questions

1. What is the current nutritional status of children aged 0–5 years in Kaduna State?
2. To what extent does food insecurity affect early childhood care and development in Kaduna State?
3. What strategies can be adopted to improve food security and promote healthy eating habits among children in Kaduna State?

Research Objectives

1. To assess the current nutritional status of children aged 0–5 years in Kaduna State.
2. To examine the impact of food insecurity on early childhood care and development in Kaduna State.
3. To propose evidence-based strategies for improving food security and promoting healthy eating habits among children in Kaduna State

Literature Review

The importance of early childhood care and nutrition can be viewed as a comprehensive basis of health, education, as well as social-emotional facilities during the life-course. The period that exists between conception and age two of a child is especially important due to the determination of great part of the possibilities of the cognitive and physical developments within a child (UNICEF, 2023; WHO, 2024). Okafor et al. (2023) state that care in the first years of life demands the combination of excellent nutrition, medical choices, responsive parenting, and a secure surrounding. Without proper feeding and care at this early phase substantial retardation of growth, defective immune system, and a below standard performance in their later life tend to result (Ibrahim & Yusuf, 2024).

Early childhood nutrition has gained significant interest around the world especially in low-and middle-income countries. According to the World Bank (2023), gains in investing in early childhood nutrition have high returns through improved productivity and low health expenses. Early

childhood care services in Nigeria however, are fragmented and underfunded with many rural and conflict states such as Kaduna State being devoid of sufficient services (Lawal & Musa, 2023). Unfavorable circumstances like poverty, illiteracy of mothers, and cultural misunderstanding related to feeding have been identified to influence the quality of nutrition and practices of the caregiver negatively (Omotayo et al., 2023).

The factors that affect early childhood care are also the systemic and environmental aspects too. Nutritional status of a child is determined by the interaction between access to healthcare, water, sanitation, and food security (Chukwu et al., 2022). One of the challenges in Kaduna State that has extremely damaged the delivery of early childhood development programs includes climate-related food crisis, displacement by war, and poor infrastructure (Mohammed et al., 2024). Markers like community health education, school feeding programs, and integrated health services have been identified to fill in some of such gaps with some degree of success (Bassey & Olayemi, 2023).

Food Insecurity and Its Impacts on Children

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Healthy Eating Habits in Early Childhood

Proper diets developed during early childhood years are critical to growth, mental development, and chronic disease prevention further in the future. WHO (2024) suggests that the first five years of living should consist of a mixture of nutrients that can be found in a balanced diet (proteins, complex carbohydrates, vitamins, and minerals, and healthy fats). This formation of the habits usually starts with breastfeeding, where the subsequent aspects of proper complementary nutrition and family-related eating habits are formed (Adegbite & Okonkwo, 2022). Setting healthy habits of dieting at an early age leads to good metabolism, immunity and brain development (Ekundayo & Ibrahim, 2023).

Breastfeeding has been established as one of the essential elements of early healthy nutrition. WHO suggests a strict regimen of breastfeeding during the first six months and safe complementary food after that until the age of two or more years (WHO, 2023). Research in Nigeria, however, demonstrates that a large percentage of mothers start solids too early or stop feeding prematurely because of social pressure or the incorrect information (Bello & Ibrahim, 2022). The lack of adequate intake of nutrients in Kaduna State is associated with the insufficient numbers of children who are exclusively breastfed, at 34 per cent of 06 months age (Kaduna State Ministry of Health, 2023; Omolade & Tanko, 2024).

Children eating patterns are highly affected by their parents and the other caregivers. The role of a caregiver is to act as a role model; therefore, a parent/caregiver shapes the relationship with food by choosing the portion volume, the variety of food, and mealtime regularity (Chinwe et al., 2022). Poor nutrition education in most of the rural areas leads to poor feeding decisions such as babyhood consumption of snacks, soft drinks, processed food or sugary foods (Ogundipe & Abiola, 2024). Studies conducted by Okafor et al. (2024) confirm nutrition counseling during antepartum and postpartum consultation enhances parental education and ensures a better eating behavior in the children at an early age.

The National Home-Grown School Feeding Programme (NHGSFP) is one of the flagship interventions implemented as under the umbrella of Social Investment Program by the Federal Government of Nigeria. The program would offer one nutritious meal a day to children in primary school, and its twofold motive would be to improve child nutrition and trigger the growth of local agriculture (Yusuf & Adamu, 2024). UNICEF (2023) notes that with the help of the program, school attendance has increased, short-term hunger has decreased, and opportunities have been created among food sellers and as well as small-scale farmers. The Kaduna State is one of the greatest beneficiaries with more than 800,000 enrolled Up till 2023 (Kaduna State Universal Basic Education Board, 2024; Adedayo & Tanko, 2022).

The government of Nigeria and its partners have also introduced the Agriculture for Nutrition and Health (Ag4NH) and Zero Hunger Strategic Review based on the concerns of food security, emphasizing the role of increasing domestic food production and raising the nutrition sensitivity of agricultural policies (FAO & WFP, 2023; Okafor et al., 2024). Besides, in certain areas of Kaduna, additional programs of school gardening, food fortification, and nutrition education have been implemented to change dietary habits in school-age representatives and their families (Odetola & Yaro, 2024). The problem is, though, that these efforts repeatedly suffer the lack of scalability and sustainability because there is not much political will left, because the corruption is still present, or because the priorities in the budget are elsewhere.

Methodology

The descriptive survey research design was applied in the present study to investigate the issue of early childhood care and nutrition, with special attention to the issue of drawing a solution to food insecurity and healthy eating habits in Kaduna State. This study relied on a total population of 285 respondents who were caregivers, parents, health workers and practitioners of early childhood education. One local government was selected purposefully so that the voice of people can have extensive geographical representation and diverse experiences, and every zone in the state (Kaduna North, Kaduna South, and Kaduna Central) was represented by local government areas: Sabon Gari-Kaduna North, Kachia-Kaduna South, and Chikun-Kaduna Central. This method made the study to echo realities of the urban and rural communities as far as childcare and nutrition are concerned. The structured questionnaire was used to collect the data through a four-point Likert scale, namely, Strongly Agree (4), Agree (3), Disagree (2), and Strongly Disagree (1). The instrument also had sample statements that determined the nutrition status of the children, the degree to which food insecurity exists and how to manage the problem of food security and eating healthy among the children in the Kaduna State. To exclude the possibility of omission on the opinion of the stake holders, stratified random sampling was employed to represent various categories of respondents in each of the selected LGA. Ethical procedures were observed in the entire process, such as an informed consent, free will and secrecy of the respondents. Descriptive statistics like mean scores and standard deviation were done in order to establish the level of agreement or disagreement on each item. The study enabled them to know the trend in nutritional care delivery and the effects of food insecurity among the three senatorial zones. Involvement of LGAs on each senatorial district gave a bigger picture of issues and possibilities of propagating early childhood nutrition in Kaduna State. The results will be used to guide the policymakers and the stakeholders on the best way to improve early childhood care and food security at the grass root level.

Result

Research Question 1: What is the current nutritional status of children aged 0–5 years in Kaduna State?

Table 1: The current nutritional status of children aged 0–5 years

	Statement	SA	A	D	SD	Mean	StD
1.	Children under five are stunted, indicating a high prevalence of chronic malnutrition that remains above the national average	134	97	17	12	3.3577	2.9246
2.	The proportion of children experiencing severe stunting has dropped, suggesting some improvement in long-term nutritional interventions	122	91	28	19	3.2154	2.8189
3.	Severe wasting among under-five children has declined significantly reflecting success in managing acute malnutrition	142	79	23	16	3.3346	2.9246
4.	The rate of children who are severely underweight has decreased showing moderate progress in weight-for-age outcomes	98	115	21	26	3.0962	2.7089
5.	Despite improvements in acute malnutrition indicators, the persistently high stunting rate signals enduring issues related to food insecurity, poor infant feeding practices, and inadequate maternal education	119	85	22	34	3.1115	2.7609
6.	The current trends demand intensified efforts in nutrition-sensitive interventions, including early childhood feeding programs, maternal care, and agricultural support to improve food access and dietary diversity in the state	115	109	15	21	3.2231	2.8175
	Cumulative mean					3.22308	2.8259

Source: Field Survey, 2025

Examining table 1 shows the recent Nutritional status of the children who are between 0 and 5 years in Kaduna State. The range in the means of 3.3577 and standard deviation of 2.9246 shows that the highest response for children aged below five were stunted, meaning that there is a high prevalence of chronic malnutrition whose value is above that of the national value. An elaboration of the response on this opinion indicated that 134 of the respondents strongly agree, 97 respondents agree against 17 that disagree and 12 others strongly disagree with this opinion. Similarly, Severe wasting of the under-five children has decreased considerably which would indicate the success in the management of acute malnutrition, attracted a second highest mean value of 3.3346 and 2.9246 standard deviation respectively with details that 142 strongly agree, 79 other agree, 23 others disagree and rest 16 strongly disagree. The data collected on the current nutritional status of 0-5 year old children were analyzed and had a cumulative mean 3.2231 and standard deviation of 2.8259 which is higher than the 2.50 index score of agree that signifies that the respondents on their part agreed to the opinions of the researcher at the options provided on the current nutritional status of children aged 0-5 years at Kaduna State.

Research Question 2: To what extent does food insecurity affect early childhood care and development in Kaduna State?**Table 2: The impact of food insecurity on early childhood care and development**

	Statement	SA	A	D	SD	Mean	Std
1.	Food insecurity has led to widespread stunting and undernutrition among children aged 0–5, affecting their physical development and overall health.	162	90	5	3	3.5808	3.0972
2.	Lack of access to adequate and nutritious food during early childhood can delay brain development, reduce concentration, and limit learning capacity in children.	122	97	18	23	3.2231	2.8298
3.	Children in food-insecure households are more prone to frequent illnesses due to weakened immune systems, which further compromises their growth and well-being	128	88	24	20	3.2462	2.8501
4.	Caregivers often adopt unhealthy feeding strategies, such as skipping meals or relying on low-nutrient foods, which negatively affect children's dietary quality and development.	101	119	15	25	3.1385	2.7428
5.	Families facing food insecurity may deprioritize healthcare, immunization, and early learning programs, reducing children's access to essential early childhood services.	139	80	23	18	3.3077	2.9049
6.	Children who experience hunger frequently may suffer from anxiety, irritability, and social withdrawal, impacting their emotional development and interactions with others	144	67	32	17	3.3000	2.9049
	Cumulative mean					3.2994	2.8883

Source: Field Survey, 2025

Table 2 is above shows the results which reveal the effects of food insecurity on early childhood care and development in state of Kaduna. This highest mean response of 3.5808 and a standard deviation of 3.0972 demonstrates that “stunting and undernutrition has been caused by food insecurity in children under age 5 and this has impaired the physical development of children and their general health”. The breakdown of response details on this opinion revealed that 162 of the respondents strongly agreed with this, and 90 respondents agreed on the same whereas 5 people disagreed and 3 strongly disagreed with this opinion. Similarly, children who experience frequent hunger might have anxiety, irritability and withdrawal and this aspect affects their emotional growth and socialization with others. This sentiment also registered the second highest value of a mean of 3.3000 and standard deviation of 2.9049 with 144 strongly agreeing, 67 others agree and 32 disagree and the rest 17 strongly disagree. Examination of the data obtained regarding the effect of food insecurity on early childhood care and development obtained cumulative mean of 3.2994 and standard deviation of 2.8883, and this number is above the index score of 2.50 in agree, hence, majority of the respondents were in agreement with the researcher that there is a significant effect of food insecurity on early childhood care and development in Kaduna state.

Research Question 3: What strategies can be adopted to improve food security and promote healthy eating habits among children in Kaduna State?**Table 3: Strategies for improving food security and promoting healthy eating habits among children**

S/N	Statement	SA	A	D	SD	Mean	Std
1.	To organize regular nutrition education campaigns in communities, schools, and health centers to teach parents and caregivers about healthy diets, meal planning, and appropriate child feeding practices	187	58	9	6	3.6385	3.1684
2.	To encourage households and schools to grow nutrient-rich crops like vegetables, fruits, and legumes	154	70	25	11	3.4115	2.9859
3.	To improve the reach and quality of the National Home-Grown School Feeding Programme (NHGSFP) by ensuring diverse, locally sourced meals.	123	95	18	24	3.2192	2.8298
4.	To boost food production and affordability by supporting local farmers with seeds, tools, training, and market access	106	98	25	31	3.0731	2.7104
5	To ensure that child growth monitoring, vitamin supplementation, and dietary counseling are available at primary healthcare centers.	119	92	22	28	3.1692	2.7901
6	To provide financial support to vulnerable households linked to school attendance, antenatal visits, or child health checkups.	102	89	34	35	2.9923	2.6501
	Cumulative mean					3.2506	2.8558

Source: Field Survey, 2025

As shown in table 3 above, strategies to enhancing food security and healthy eating habits among children in Kaduna state are explained. Average measurement of 3.6385 and the standard deviation of 3.1684 depicts the Greatest reply of conducting frequent nutrition education campaigns in communities, schools and health centers and educate parents and caregivers on good eating habits, meal preparation and proper feeding of parents

and their children. The response details of this opinion indicated that a high of 187 respondents strongly agreed with this opinion and 58 others agreed with the opinion as against the 9 and 6 respectively that disagree and strongly disagree with the opinion. To this same extend, to promote households and schools to cultivate nutrient rich produce such as vegetables, fruits and legumes responded with the second highest mean rating of 3.4115 and standard deviation of 2.9859 whereby 154 strongly confirm, 70 others confirm and 25 disagree and the rest 11 strongly disagree. When data collected on the options of improving food security and giving healthy eating habits to children are analyzed, it shows the cumulative mean of 3.2506 and standard deviation of 2.8558 that is above 2.50 index score to agree, thus shows that the respondents agreed with the provided opinion of researcher in the options of improving food security and giving healthy eating habits to children in Kaduna state.

Conclusion

The evaluation of early childhood care and nutrition in Kaduna State demonstrates the critical junction of the lack of childcare practices, a high occurrence of food insecurity, and the development of poor eating habits in young children. The initial five years in life are a delicate phase of physical advancement, mental development, and immune strength all of which are profoundly affected by a state of available nutritious foods and receptive caregivers (WHO, 2024; UNICEF, 2023). Nonetheless, since the results of various communities within the Kaduna have shown that numerous children fail to meet the minimum acceptable diet, factors like poverty, maternal illiteracy, cultural feeding habits, and unavailability of healthcare providers have been named (Ibrahim & Musa, 2023; Omotayo et al., 2023). Such shortages are leading causes of high levels of stunting, wasting, and micronutrient deficiencies at the regional level (FAO, 2023).

Food insecurity, especially, is one of the key factors that predetermine child malnutrition and adverse health outcomes. The conflicting, climatic and economic vulnerabilities have compromised the food system of the households in Kaduna, thus restricting families in terms of the capacity to support diversified, nutritious diets to their children (Mohammed & Danladi, 2024; UNDP, 2024). The government policies and programmes such as the National Home-Grown School Feeding Programme (NHGSFP), Maternal, Infant and Young Child Nutrition (MIYCN) strategies, and the National Policy on Food and Nutrition provide a good platform of enhancing early childhood nutritiousness in Kaduna (FGN, 2022; WHO & FMOH, 2023). Nevertheless, problems with program access, uniformity, and financing as well as local community engagement remain the impediments to their efficacy (Akinyemi & Chukwu, 2024; Save the Children, 2024).

Recommendations

Nutrition education initiatives on parents and caregivers, especially rural and low-income-earning urban area mothers, have to be increased. This must be accompanied by frequent sensitization on breast feeding, age appropriate complementary feeding, dietary diversity, and hygiene standards during the antenatal and postnatal visitations. Those results demonstrate that maternal knowledge enhancement can have a solid positive effect on child diet (Okafor et al., 2024; Omotayo & Lawal, 2023). This information needs to be presented to the community health workers through local languages and cultural approach methods.

The NHGSFP ought to be extended to other primary schools particularly in unserved rural regions of Kaduna State. Besides the provision of more reach, the quality of the meals and their dietary balance should be enhanced by enhancing food diversity and monitoring on a regular basis (Adedayo & Tanko, 2022; Akinyemi & Chukwu, 2024). The inclusion of local farmers will also make the program nutrition-sensitive and agriculturally inclusive, and the coordination of the local farmers with the local economies benefits the sustainability of the supply chain.

The government and the NGOs are supposed to create and maintain community nutrition centers and mother support groups within the villages and informal settlements. Such centers will be able to support the monitoring of child growth, counseling, supplying fortified food, and referral of malnourished children (Save the Children, 2024; UNICEF, 2023). Nutrition services should be incorporated in the current primary healthcare framework to target more households as well as early identification of malnutrition.

The issue of food insecurity must be resolved by synchronized agricultural, social security and livelihood packages. This involves increasing food production within the households by home gardening, farm input subsidizing, and conditional cash transfers of vulnerable families (FAO, 2023; UNDP, 2024). Household food security and nutrition resilience will also be improved by reinforcing the rural infrastructure, market access and security to conflict prone regions.

Finally, stronger enforcement of existing nutrition-related policies, such as the National Policy on Food and Nutrition and the Strategic Plan of Action for Nutrition, is critical. Government agencies at the federal, state, and local levels must coordinate with education, health, agriculture, and social welfare departments to ensure effective policy implementation (World Bank, 2023). Regular evaluation and accountability mechanisms should be instituted to track progress and address gaps in service delivery.

REFERENCES

1. Adamu, L., & Sani, M. (2022). *Nutritional interventions and childhood health in Northern Nigeria*. Journal of Public Health in Africa, 13(2), 123–131. <https://doi.org/xxxx>
2. Adegbite, A. O., & Okonkwo, C. C. (2022). *The role of parental education in early childhood feeding practices in Nigeria*. African Journal of Nutrition and Health, 10(1), 45–54.
3. Adeyemi, T., & Ibrahim, S. (2023). *Child nutrition, household poverty, and the SDGs: A case study of Kaduna State*. Nigerian Journal of Social Policy, 14(2), 87–98.

4. Agbo, J., Ibrahim, M., & Uche, K. (2024). *Food insecurity and early learning outcomes in Kaduna rural communities*. International Journal of Childhood Development Studies, 12(1), 55–70.
5. Akinwunmi, L., & Bello, A. (2023). *Maternal health, child care, and nutrition: Emerging patterns in North-West Nigeria*. Health and Nutrition Review, 8(3), 113–124.
6. Arowolo, R. T., & Yusuf, Z. A. (2023). *Determinants of under-five malnutrition in conflict-prone regions of Nigeria*. Nigerian Journal of Community Health, 16(4), 211–225.
7. Bamidele, A., & Usman, T. (2022). *Feeding habits and nutritional outcomes among children in semi-urban Nigeria*. West African Health and Social Sciences, 11(2), 90–104.
8. Bassey, E. A., & Olayemi, F. T. (2023). *The double burden of malnutrition in Northern Nigeria: An analysis of socio-economic factors*. African Journal of Health and Development, 20(1), 38–47.
9. Bello, I., & Ajibola, R. (2022). *Early childhood nutrition policy implementation in Nigeria: Gaps and prospects*. Nigerian Policy Journal, 9(1), 33–41.
10. Chinwe, O. J., Abdulrahman, A., & Yakubu, H. (2022). *Community participation in food security programs in Zaria*. Journal of Rural Health Studies, 15(2), 76–85.
11. Chukwu, C. E., Okoli, P. A., & Musa, I. M. (2022). *Challenges in improving early childhood nutrition in Kaduna State*. Journal of African Health, 13(2), 101–112.
12. Ekpo, U. A., Hassan, M., & Olaniyan, S. (2023). *School-based feeding programs and their effectiveness in rural Nigeria*. Nigerian Educational Research Journal, 12(1), 66–79.
13. Ekundayo, B., & Ibrahim, Y. (2023). *Household food access and nutritional diversity among preschool children in Nigeria*. Nigerian Journal of Development Research, 17(1), 123–136.
14. Ezeokoli, A., Okeke, J., & Danjuma, L. (2023). *Effect of maternal knowledge on nutritional outcomes of children aged 0–5*. Health Promotion Research Journal, 14(2), 50–64.
15. FAO. (2023). *State of food security and nutrition in Nigeria 2023*. Food and Agriculture Organization of the United Nations. <https://www.fao.org>
16. Federal Ministry of Education (FME). (2023). *Nutrition education and school health policy framework*. Abuja: Federal Government Press.
17. Save the Children. (2024). *Combating child hunger: Community-based nutrition programs in Nigeria*. <https://www.savethechildren.org.ng>
18. Hassan, T., Umar, M., & Isah, L. (2024). *Assessing nutrition-related health risks among Nigerian children*. Nigerian Journal of Preventive Health, 9(1), 60–72.
19. Ibe, J. C., & Olorunfemi, K. (2022). *Linking agricultural sustainability to child nutrition*. Agricultural and Health Interface, 11(3), 143–153.
20. Ibrahim, R., & Suleiman, M. (2023). *Gender roles, household food distribution, and child nutrition in rural Kaduna*. Gender & Health, 6(2), 99–109.
21. Ibrahim, H., & Yusuf, B. (2024). *An analysis of feeding practices among under-five children in Northwest Nigeria*. Journal of Public Health Perspectives, 13(1), 34–48.
22. Jatau, S., Aliyu, T., & Bako, H. (2023). *Socioeconomic determinants of food insecurity in Kaduna urban slums*. Urban Health Journal, 7(3), 75–87.
23. Kaduna State Ministry of Health. (2023). *Annual report on child nutrition and health services in Kaduna State*. Kaduna: State Government Press.
24. Lawal, T., & Ahmed, B. (2024). *Improving nutritional outcomes through maternal education in Northern Nigeria*. International Journal of Educational Development, 21(1), 56–70.

25. Lawal, S., & Musa, A. (2023). *Health systems and food policy integration in Kaduna State*. Nigerian Journal of Policy and Administration, 8(2), 43–55.
26. Mohammed, A., Yakubu, S., & Dogo, L. (2024). *Cultural perceptions and nutrition among children under five in Kaduna State*. Journal of Social Anthropology and Health, 9(1), 112–124.
27. Musa, M., & Danladi, U. (2023). *Barriers to early childhood nutrition services in rural Northern Nigeria*. Nigerian Journal of Child Health, 11(2), 67–77.
28. Musa, A., & Ibrahim, T. (2022). *Community-based interventions in promoting child nutrition*. Nigerian Community Health Review, 10(4), 54–68.
29. National Bureau of Statistics (NBS). (2023). *Multiple Indicator Cluster Survey (MICS) Summary Report*. Abuja: NBS. <https://www.nigerianstat.gov.ng>
30. Njoku, M., Yusuf, A., & Ibrahim, G. (2024). *Dietary patterns and nutritional deficiencies in early childhood in Kaduna*. Food and Health Review, 8(1), 92–106.
31. Obiora, E., & Dauda, I. (2023). *Household income and its implications on food security in Nigeria*. African Development Journal, 6(2), 77–89.
32. Odetola, F. O., & Yaro, H. (2024). *Policy implementation and impact of school feeding programs in Kaduna State*. Journal of Education and Nutrition Policy, 7(2), 134–148.
33. Ogundipe, K. A., & Abiola, S. O. (2024). *Nutritional knowledge among caregivers in Northern Nigeria*. Journal of Care and Child Health, 9(2), 88–97.
34. Okafor, C., Nwankwo, J., & Sule, M. (2024). *Integrated health and nutrition approach to child development*. Nigerian Health and Social Research, 13(1), 109–120.
35. Okonkwo, H., Bello, M., & Hassan, R. (2022). *Trends in malnutrition and policy interventions in Northern Nigeria*. Nutrition Watch Nigeria, 11(3), 70–82.
36. Omotayo, B., Akinwale, T., & Sanni, G. (2023). *Impact of maternal employment on child nutrition outcomes in Kaduna*. Women & Child Welfare Journal, 5(1), 41–52.
37. Omotola, F., & Uche, C. (2023). *Food security programs and their outreach in semi-urban Kaduna*. Nigerian Journal of Rural Sociology, 9(3), 53–66.
38. Onuoha, J., & Bello, Z. (2023). *Food insecurity, malnutrition, and early childhood education: A triangulated study in Northern Nigeria*. Journal of Interdisciplinary Health Studies, 7(1), 121–135.
39. Oyetunde, A., & Musa, R. (2024). *Behavioral approaches to improving children's eating habits in Nigeria*. Child Nutrition & Behavior, 6(1), 68–79.
40. Tanko, A., & Yaro, M. (2024). *The link between stunting and household food practices in Kaduna State*. Journal of Public Nutrition, 12(2), 39–49.
41. Umeh, P., & Okeke, L. (2023). *Nutrition and cognitive development in Nigerian preschoolers*. Nigerian Early Childhood Review, 5(2), 88–99.
42. UNICEF. (2023). *Child nutrition in emergencies: Nigeria situation report*. United Nations Children's Fund. <https://www.unicef.org/nigeria/>
43. WHO. (2024). *Guidelines on complementary feeding and child health*. World Health Organization. <https://www.who.int/>
44. World Bank. (2023). *Food systems and early childhood development in Nigeria: Policy recommendations*. <https://www.worldbank.org/en/country/nigeria>