

# ORIE Research Summary

## Nutrition Research in Northern Nigeria

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### Quantitative Impact Evaluation: *Baseline report*

ORIE is composed of six workstreams, of which one is a mixed quantitative and qualitative impact evaluation of the WINNN Programme as a whole. The quantitative evaluation aims at assessing the impact of two of the WINNN outputs – the Community Management of Acute Malnutrition (CMAM) and Infant and Young Child Feeding (IYCF) interventions. This summary presents the results of the baseline study for the quantitative impact evaluation.

#### Methods

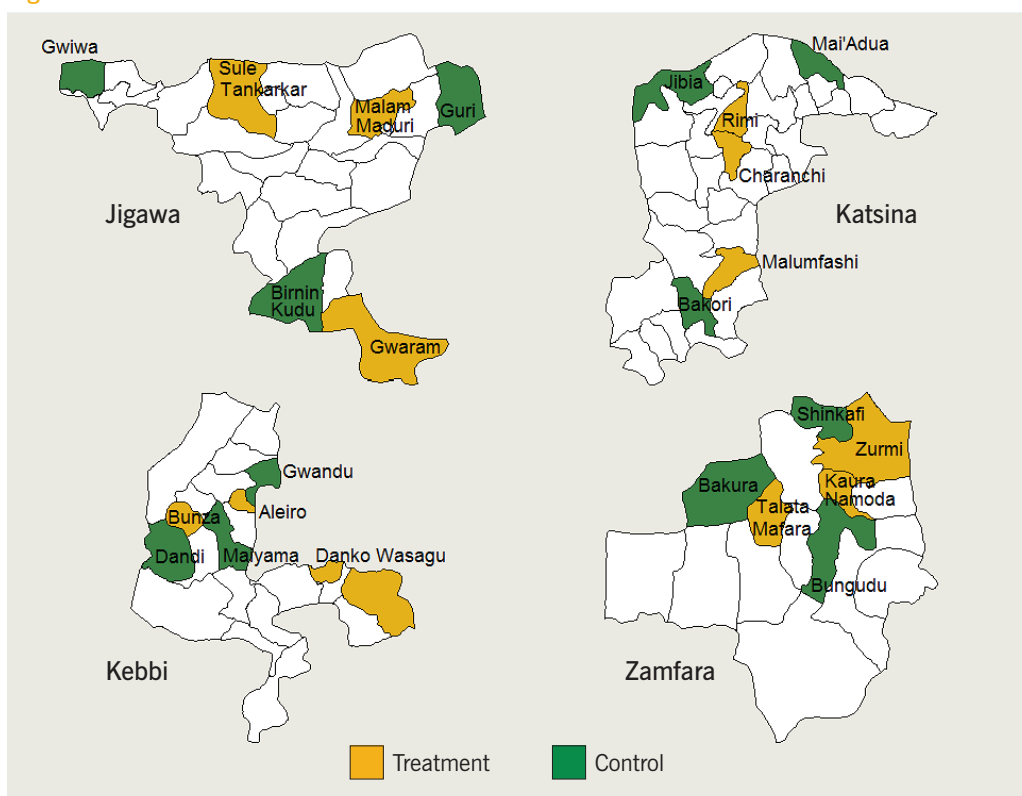
The quantitative impact evaluation employs a quasi-experimental design that uses both treatment and control groups to assess the impact of the WINNN IYCF and CMAM package of interventions. The treatment group is composed of 12 LGAs in which the WINNN interventions are being implemented. There are three treatment LGAs in each of

the four states of Jigawa, Katsina, Kebbi and Zamfara. (See Figure 1)

Each treatment LGA has been matched to a control LGA within the same state in which there is no intervention. By comparing the changes in outcomes over time between the treatment and control groups, an assessment of the impact of the WINNN interventions can be made. This type of impact evaluation →

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Figure 1: Distribution of treatment and control LGAs



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design is called difference-in-difference and allows us to assess the impact of the WINNN programme in a 'real world' scenario.

## Data collection

Baseline data was collected from households across both treatment and control groups in June 2013. This data included specific information on children aged 0-35 months and women of reproductive age (15-49 years). To assess any changes to outcomes as a result of the WINNN Programme, data will be collected from the same households in the endline survey in June 2016 after three years of programme implementation.

## Results: Characteristics of communities and households

The households surveyed were all located in rural areas that were difficult to access. Communities had relatively good access to health facilities and primary schools, as these were mostly accessible within about 30 minutes of travel time.

The households surveyed were mainly headed by adult males, consisted of many children (seven on average) and very few elderly people. Food insecurity was a problem for many households: about half reported not having enough food for the household inhabitants at least once in the last 12 months.

Nearly two-thirds of households had access to electricity. However, utilisation of electronic devices was very low, with the exception of mobile phones.

### Water and Sanitation

Safe drinking water was not easily accessible, as only about 60 per cent of all households used an improved source of drinking water. Treatment of drinking water was uncommon. Similarly, sanitation infrastructure was poor: about 80 per cent of households used a pit latrine and nearly 20 per cent used no facility.

### Access to Health Care

The main access point to health services for households were dispensaries, which lay within one hour of one-way travel time for 80 per cent of the households, and health facilities (75 per cent within one hour).

## Results: Characteristics of mothers

Nearly 80 per cent of mothers got married before the age of 16 and most had their first child two years later at the age of 17. While the majority of mothers were exposed to Quranic education, only 9 per cent had any form of formal education. The majority of mothers (nearly 65 per cent) ran their own small business and were involved in a number of decision-making processes within the household but were least likely to be involved in decisions regarding food purchases.

### Infant and Young Child Feeding

Knowledge of best breastfeeding practices was limited among mothers. Only 59 per cent of mothers knew that breastfeeding of infants should start immediately or within the first hour after birth. Only 7 per cent of mothers knew that infants should not receive any water in addition to breast milk. There was a strong correlation between knowledge of appropriate breastfeeding practices and household wealth.

### Access to Antenatal Care

Less than half (42 per cent) of mothers to children born in the last 35 months had received any antenatal care (ANC). Almost all mothers had delivered their child at home and only 14 per cent of mothers had gone to a health facility to receive post-natal care (PNC).

### Maternal Nutritional Status

The majority of mothers were found to have a normal body mass index, (72 per cent), although a significant percentage (19 per cent) were underweight. Only a few mothers were overweight (9 per cent) according to these measures.

## Results: Characteristics of children

### Nutritional Status

Child nutritional status is assessed using height-for-age (stunting), weight-for-age (underweight), and weight-for-height (wasting) for children aged 0-35 months. More than half of the children surveyed (58 per cent) were classified as stunted, significantly above the World Health Organization cut-off for a critical situation (40 per cent). Similarly, 41 per cent of the children were considered underweight and

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wasting was at unacceptably high levels (16 per cent). Some 6 per cent of all children surveyed were found to be severely wasted. Nutritional status of children did not differ much across household wealth quintiles or levels of mother's decision-making power. However, children that were born to mothers with at least secondary education were significantly less likely to be stunted

## Infant and Young Child feeding

Age-appropriate breastfeeding measures the proportion of children aged 0–5 months that are exclusively breastfed and the proportion of children aged 6–23 months that are currently breastfed but also receive complementary food. According to this measure only about half of the surveyed children (55 per cent) were appropriately breastfed. In terms of exclusive breastfeeding, only 7 per cent of children aged 0–5 months were exclusively breastfed.

Using the World Health Organization (WHO) standards for minimum meal frequency (minimum number of times of feeding), minimum dietary diversity (food from four or more food groups), and minimum acceptable diet (combination of meal frequency and dietary diversity), it is clear that only very few children were appropriately fed. Only about a quarter of children aged 6–23 months (23 per cent) received food the suggested minimum number of times, and an even lower number (14 per cent) received food from four or more food groups. The combination of both indicators shows that only about 5 per cent of all children received a minimum acceptable diet. In terms of the nutritional value of this food, iron-rich or iron-fortified food (such as meats and fish) was only consumed by 14 per cent of all children.

## Health Care

Regular implementation of preventive health care practices was uncommon among children. A little under half of children 6–35 months had received vitamin A drops in the past 6 months, predominantly receiving them at home (84 per cent), indicating the importance of Immunisation Plus Days in Northern Nigeria where Vitamin A is distributed house to house. Similarly, vaccination levels were low: only 2.7 per cent of children aged 12–23 months could be considered fully vaccinated according to the

standard set out in the national guidelines. A high proportion of all children aged 12–35 months (41 per cent) had not received any vaccinations, which is evidence for the low level of preventive health care in the area of the study. Finally, under a tenth of all children had ever had their mid-upper arm circumference (MUAC) (9 per cent) or weight/height measured (9 per cent).

## Results: Experience of the WINNN and other nutrition interventions

**Infant and Young Child Feeding** – The percentage of mothers that had participated in IYCF sessions was generally low. On average, about 18 per cent of mothers received IYCF training at health facilities. A significantly lower proportion, just 5 per cent, of mothers had received community-based IYCF training, while training conducted through community support groups/women's groups was very uncommon.

**Community Management of Acute Malnutrition** – Roughly one-third (31 per cent) of all respondents to community questionnaires, who were mainly educated, male, prominent members of the communities, reported that their community had a community mobiliser who identifies malnourished children using MUAC. There was a significantly lower level of awareness of CMAM interventions among households; only 6 per cent of all households reported that they were aware of a community mobiliser in their community.

**Maternal and Child Health Weeks** – About half (55 per cent) of all respondents to the community questionnaires had ever heard of MNCH weeks. However, only about a tenth (12%) of all mothers had ever heard of MNCH weeks, indicating a large information gap between the awareness of prominent members of the community and mothers. A very small proportion of mothers (5%) had attended the MNCH day immediately preceding the survey in May 2013.

## Discussion: Baseline findings

### Stunting begins in the womb

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Given that stunting is a result of long-term and chronic malnutrition, this indicates that a number of these children were born stunted and must have been exposed to chronic nutrient deprivation during pregnancy in the womb (intrauterine growth retardation).

## **Adequate nutrition for mothers during pregnancy is essential**

Furthermore, both the prevalence of stunting and underweight was significantly higher among children whose mother was underweight indicating a correlation between maternal and childhood malnutrition. Analysis of maternal malnutrition indicated that low BMI and being classified as underweight among mothers is correlated with low maternal age.

## **Stunting rates are unacceptably high – potentially leading to low IQ, poor school achievement and low-skilled employment**

With a stunting rate of 58 per cent among children aged 0-35 months, significantly above the WHO cut-off of a critical situation, it is imperative to improve child health and nutrition. Stunting does not only affect height but can also affect cognitive capacity, educational attainment, and thus future adult earnings. Health is also affected; stunted children are more likely to die in childhood and if they survive have increased susceptibility to diseases such as diabetes and cardiovascular disease in later life.

## **Educated mothers had children less likely to be malnourished**

Mothers with a secondary education or higher were significantly less likely to have a stunted child or a child with any form of malnutrition.

## **IYCF interventions must reach communities as health facility access is low**

With regards to ANC and IYCF interventions, coverage was found to be very low with less than half of mothers with children born in the

last 35 months having received any ANC. Poor access to health facilities indicate the importance of IYCF interventions reaching beyond the health facility to communities. This could be done through a combination of outreach activities or community volunteers, but either way, reaching mothers within their communities will be an important factor in enhancing the impact of the programme.

## **Community leaders could be an important mobiliser**

The baseline study suggests that community leaders consistently showed higher levels of awareness of IYCF, MNCH weeks and CMAM interventions than mothers. Such a discrepancy illustrates the importance of working with communities and warrants further work using community leaders as an important community mobiliser.

## **IYCF Interventions seem to hold promise for improving child nutrition**

Given that almost all women felt that it was important to attend IYCF sessions, these seem to provide an important entry point to improving child nutrition. Tailoring messages based on the baseline survey - for example focusing on not giving water or other liquids to infants under 6 months, could ensure that WINNN messaging is most effective.

## **Scale-up and roll-out of nutrition evaluations must be coordinated to preserve the rigour of the impact evaluation**

Finally, it must be reiterated that this baseline study has been designed to provide evidence of impact of the WINNN package of interventions in a 'real-world'. Careful attention must be taken to coordinate the implementation of any new or scaled-up nutrition specific or nutrition sensitive programmes in the evaluation areas, both treatment and control LGAs, so as to preserve the rigour of the impact evaluation design until June 2016.

## **ORIE and WINNN**

ORIE is an independent component of the UK Government's Department for International Development (DFID) funded Working to Improve Nutrition in Northern Nigeria (WINNN) programme. WINNN is working to improve the nutritional status of 6.2 million children under five years of age in five states of northern Nigeria. ORIE is carrying out research to determine the impact of WINNN and generate important research on key evidence gaps regarding solutions to undernutrition in northern Nigeria.

## **Credits**

This ORIE Research Summary was written Paul Jasper and Aly Visram. It is based on the Quantitative Impact Evaluation Baseline Report by Aly Visram, Paul Jasper, Lucie Moore, Femi Adegoke, Andrej Kveder, Shafique Arif, and Patrick Ward. Readers are encouraged to quote and reproduce material from ORIE Research Summaries in their own publication. In return, ORIE requests due acknowledgement and quotes to be referenced as above.

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