NUTRITION INTERNATIONAL

ENDLINE SURVEY FOR NUTRITION INTERNATIONAL'S INTERVENTION IN BANGLADESH: ZINC/ORS

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List of Acronyms

AHI	Assistant Health Inspector
BBS	Bangladesh Bureau of Statistics
BDHS	Bangladesh Demographic and Health Survey
CC	Community Clinic
CHCP	Community Health Care Provider
CS	Civil Surgeon
DDFP	Deputy Director - Family Planning
FPI	Family Planning Inspector
FWA	Family Welfare Assistant
FWV	Family Welfare Visitor
HA	Health Assistant
HDRC	Human Development Research Centre
HI	Health Inspector
ISG	Institutional Support Grant
KAP	Knowledge, Attitude and Practice
KII	Key Informant Interview
MO MCH-FP	Medical Officer, Maternal and Child Health/Family Planning
NI	Nutrition International
NIMS	Nutrition Intervention Monitoring Survey
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
PPE	Personal Protection Equipment
PPS	Probability Proportionate to Size
SACMO	Sub-Assistant Community Medical Officer
SACMO-FP	Sub-Assistant Community Medical Officer - Family Planning
SDV	Small Drug Vendor
UH&FWC	Union Health and Family Welfare Centre
USC	Upazila Health Complex
WHO	World Health Organisation

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Executive Summary

Introduction

This report presents the findings from the endline survey conducted to assess the effectiveness of Nutrition International's Zinc/ORS intervention in Bangladesh, aimed at improving childhood diarrhea management through increased use of zinc and ORS treatments. This endline survey marks the conclusion of NI's 5-year ISG grant and serves as a follow-up to the baseline survey conducted in 2020, which gathered data on the same indicators. The objective of the endline survey for Nutrition International's Zinc/ORS program in Bangladesh was to track progress against key indicators since baseline, specifically focusing on care-seeking behaviors for childhood diarrhea, and the coverage and use of zinc and ORS. The expected result was to enhance the understanding of the program's contribution to improving childhood diarrhea management by evaluating the increase in treatment adherence, caregiver knowledge, and health worker practices.

Methodology

The study adopted a mixed-method approach. A total of 1,017 caregivers of children aged 6-59 months who had diarrhea in the past two weeks were surveyed, with further interviews conducted with 549 health providers and small drug vendors. The survey targeted 14 districts (Barishal, Chandpur, Dhaka, Faridpur, Gaibandha, Gopalganj, Jhenaidah, Lalmonirhat, Magura, Narsingdi, Nilphamari, Pirojpur, Rangpur, Thakurgaon) under Nutrition International (NI)'s Zinc/ORS intervention coverage. A sample size of 12,151 households was pre-listed, with random selection based on the probability proportional to size (PPS) method. Data collection involved structured interviews and Key Informant Interviews (KIIs) to assess caregivers' knowledge, health worker practices, and the supply chain for zinc and ORS. The data was analyzed using statistical tools such as SPSS for quantitative analysis and thematic analysis for qualitative responses, ensuring comprehensive insights into the effectiveness of the intervention.

Key Findings

The endline survey of Nutrition International's Zinc/ORS intervention in Bangladesh highlighted significant improvements in childhood diarrhea management, showcasing notable changes in caregiver knowledge, treatment-seeking behavior, and the use of zinc and ORS. These improvements were seen across both the public and private sectors, contributing to better treatment outcomes and the broader goal of reducing diarrhea-related morbidity and mortality in the country.

Improvements in Care-seeking Behavior: The intervention resulted in a marked increase in the proportion of caregivers seeking treatment for diarrhea. At baseline, 90.9% of caregivers sought treatment outside the home, which rose to 95.7% by the endline. Notably, public sector care-seeking increased from 13.4% to 16.1%, while treatment-seeking from private providers rose sharply from 83% to 92.6%. This trend highlights a growing reliance on private sector treatment, although the public sector also saw improvements. In terms of timely care-seeking, the percentage of caregivers who sought treatment within 24 hours remained consistent, at 78.4% at baseline and 78.7% at endline.

Increased Coverage of Zinc and ORS: The use of both zinc and ORS for diarrhea treatment saw significant improvements. The proportion of caregivers who received both treatments from public health facilities rose from 25.6% at baseline to 72.8% at the endline. In the private sector, caregivers receiving both zinc and ORS rose from 17.7% to 30.9%. The proportion of caregivers who reported children consuming both ORS and zinc rose from 10.2% at baseline to 32.9% at the endline. However, the ORS and Zinc consumption in recommended doses were 19.4% at endline (a significant increase from 2.1% at baseline, marking a 17.3 percentage points increase). This increase in zinc and ORS usage reflects a successful shift toward recommended diarrhea management practices, contributing to improved health outcomes.

Improvement in Caregiver Knowledge: Caregiver knowledge about diarrhea management, particularly the correct use of zinc and ORS, significantly improved during the intervention. At baseline, only 5.1% of caregivers could correctly describe how to treat diarrhea with zinc and ORS according to national guidelines. By the endline, this figure had risen to 19.7%, showing a clear increase in understanding of the appropriate treatments. Additionally, 66.6% of caregivers reported receiving key messages about diarrhea treatment from a program source in the last six months, up from just 16.2% at baseline. This demonstrates the effectiveness of the intervention's behavior change communication efforts in raising awareness about the importance of using zinc and ORS.

Impact on Diarrhea Management Knowledge and Practices: There was also a positive shift in caregivers' ability to state the correct steps for managing childhood diarrhea. The proportion of caregivers who could state all the correct steps to manage diarrhea increased from 1.2% at baseline to 7.9% at the endline. Moreover, 56% of caregivers could now correctly identify where to obtain zinc and ORS, up from 17.1% at baseline. This indicates that caregivers are not only more knowledgeable about proper treatment but also more informed about where to access these life-saving medicines.

Health Provider Knowledge and Practices: Health providers also showed substantial improvements in their knowledge and practices related to diarrhea treatment. The percentage of health workers who correctly communicated the appropriate dosage and duration of zinc treatment increased from 47.7% at baseline to 78.4%, and for ORS, the figure rose from 40.2% to 74.8%. These improvements in health worker knowledge contributed to better counseling and treatment practices, positively influencing caregiver adherence to treatment protocols. The quality of care provided at public health facilities thus improved, which likely helped increase caregivers' trust in the public health system.

Supply Chain Improvements and Stockouts: While there was some improvement in the availability of zinc and ORS at health facilities, stockouts remained a significant challenge, particularly at sub-centers and community clinics. At baseline, 7% of community facilities experienced a stockout of ORS in the last three months, and this increased to 19.3% by the endline. Similarly, the percentage of facilities reporting a stockout of zinc increased from 7% at baseline to 23.1% at the endline. However, the stockout is significantly more prominent in facilities managed by the Department of Family Planning than in health services. Despite these challenges, the intervention succeeded in increasing the supply of both treatments at more central locations like UHCs, which contributed to better treatment availability. However, the ongoing stockouts at sub-centers underscore the need for improvements in supply chain management. The socio-political unrest for the 3-4 months preceding the survey (since August 2024) has mounted the supply chain challenges.

Challenges: The main challenges identified in the intervention include stockouts at sub-centers and community clinics, where there were insufficient supplies of zinc and ORS. This led to caregivers relying on the private sector for treatment, which can be more expensive and less regulated. Although the supply at Upazila Health Complexes (UHCs) improved, delays in procurement and fixed, as well as inadequate allocations to smaller centers, contributed to shortages. Additionally, many caregivers still misuse treatments, such as stopping zinc early due to side effects or using antibiotics, which are not recommended. The continued high reliance on the private sector for care also raises concerns about the quality and consistency of treatment.

Conclusion

The Zinc/ORS intervention in Bangladesh has shown significant progress in improving childhood diarrhea management, with notable increases in treatment-seeking behavior, caregiver knowledge, and the use of zinc and ORS. The intervention successfully raised awareness about the importance of these treatments, leading to greater adherence to recommended practices. However, challenges such as stockouts at sub-centers, reliance on the private sector for care, and some incorrect treatment

practices continue to hinder the full potential of the program. Despite these issues, the intervention has laid a strong foundation for improving public health outcomes and reducing diarrhea-related morbidity and mortality.

Recommendations

To sustain and build on the successes of the intervention, several broad issues need to be addressed. First, strengthening the supply chain is critical to ensuring that all facilities, including sub-centers and community clinics, family welfare centers, and MCWCs receive adequate and timely supplies of zinc and ORS. Improved stock management and procurement systems are essential for minimizing stockouts. Second, efforts should be made to reduce the reliance on the private sector by further engaging and enhancing the quality of care in public health facilities. This includes training health workers and strengthening public sector outreach. Lastly, there is a need for continuous caregiver education to address misconceptions and encourage full adherence to treatment protocols, particularly the correct use and duration of zinc supplementation. These steps will help ensure that the gains achieved by the intervention are sustained and that childhood diarrhea is more effectively managed across the country.

Key Indicators at a Glance

The following table presents the value (weighted) of the key indicators at baseline and endline

Indicators	Baseline			Endline		
	#	%	N	#	%	N
% of children 6-59 months who had diarrhoea in the two weeks preceding the survey.	679	4.91	13,843	1017	7.6	13,085
% of caregivers of children 6-59 months with diarrhoea in the last two weeks who sought treatment for diarrhoea outside the home.	531	90.9	584	973	95.7	1017
% of caregivers of children 6-59 months with diarrhea in the last two weeks who sought treatment for the diarrhea outside the home within 24 hours of onset.	458	78.4	584	800	78.7	1017
% of caregivers of children 6-59 months with diarrhea in the last two weeks who sought treatment for the diarrhea outside the home within 24 hours of onset and state that zinc and ORS are the preferred treatment for childhood diarrhea.	56	9.6	584	243	23.4	1017
% of caregivers of children 6-59 months with diarrhea in the last two weeks who sought treatment for the diarrhea from the public sector.	72	13.4	535	157	16.1	973
% of caregivers of children 6-59 months with diarrhea in the last two weeks who sought treatment for the diarrhea from the public sector and received zinc and ORS to treat the diarrhea.	20	25.6	80	114	72.8	157
% of caregivers of children 6-59 months with diarrhea in the last two weeks who sought treatment for the diarrhea from the private sector.	444	83	535	901	92.6	973
% of caregivers of children 6-59 months with diarrhea in the last two weeks who sought treatment for the diarrhea from the private sector and received zinc and ORS to treat the diarrhea	80	17.7	450	278	30.9	901
% of caregivers of children 6-59 months with diarrhea in the last two weeks who sought care and were given the recommended course of zinc and ORS.	11	2.1	535	188	19.4	973
% of children 6-59 months with diarrhea in the last two weeks who consumed zinc and ORS.	55	10.2	535	321	32.9	973
% of caregivers who can correctly describe how to treat childhood diarrhea with Zinc and ORS according to national guideline/minimum standard.	30	5.1	584	200	19.7	1,017
% of caregivers of children 6-59 months who have received key messages on the treatment of childhood diarrhea from a program source in the last six months.	94	16.2	584	677	66.6	1,017
% of caregivers of children 6- 59 months who have received key messages on the treatment of childhood diarrhea from a mass media source in the last six months.	41	7.1	584	189	18.6	1,017
% of caregivers of children 6-59 months who have received key messages on using zinc and ORS to treat childhood diarrhea from a program source in the last six months.	36	6.2	584	438	43.1	1,017
CORRECT CARE FOR DIARRHEA: % of caregivers of children 6-59 months who can state all of the steps to	7	1.2	584	80	7.9	1,017

Indicators	Baseline			Endline		
	#	%	N	#	%	N
correctly care for a child with diarrhea.						
% of caregivers of children 6-59 months who can state where to obtain zinc and ORS.	100	17.1	584	570	56	1,017
Supply of ORS and zinc in facilities associated with frontline health service providers.	ORS sachets only			4	1.4	282
	Rice ORS only			2	0.7	282
	Zinc tablets only			3	1.1	282
	Zinc syrup only			1	0.4	282
	Both Zinc and ORS			222	78.7	282
% of contact points (community/facility) that experienced a stock out of ORS at any point during the last 3 months		5.2	52		19.3	269
% of contact points (community/facility) that experienced a stock out of ORS at any point during the year		7.4	58		21.6	269
% of contact points (community/facility) that experienced a stock out of Zinc at any point during the last 3 months		7	62		23.1	268
% of contact points (community/facility) that experienced a stock out of Zinc at any point during the year		9.4	69		25.7	268