

Baseline Survey of Scaling up the Use of Zinc and Oral Rehydration Salts (ORS) in the Treatment of Diarrhoea among 6-59 Months Children to Reduce Child Morbidity and Mortality in Bangladesh

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Micronutrient Initiative

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Abbreviations

| | |
|--------|---|
| AHI | Assistant Health Inspector |
| BCC | Behavior Change Communication |
| BCI | Behavioural Change Intervention |
| CC | Community Clinic |
| CHCP | Community Health Care Provider |
| CS | Civil Surgeon |
| DCI | Data Collection Instrument |
| DDFP | Deputy Director of Family Planning |
| DGHS | Directorate General of Health Service |
| FPI | Family Planning Inspector |
| FWA | Family Welfare Assistant |
| FWV | Family Welfare Visitor |
| GoB | Government of Bangladesh |
| HA | Health Assistant |
| HI | Health Inspector |
| HMIS | Health Management Information System |
| IEC | Information, Education and Communication |
| IMCI | Integrated Management of Childhood Illness |
| IPC | Inter-Personal Communication |
| MI | Micronutrient Initiative |
| NGO | Non-Government Organization |
| ORS | Oral Rehydration Salts |
| PHC | Primary Health Care |
| SACMO | Sub-Assistant Community Medical Officer |
| SUZY | Scaling up Zinc for Young Children with Diarrhoea |
| UFPO | Upazila Family Planning Officer |
| UH&FPO | Upazila Health and Family Planning Officer |
| UH&FWC | Union Health and Family Welfare Centre |
| UHC | Upazila Health Complex |
| UNICEF | United Nations Children's Emergency Fund |
| WHO | World Health Organization |

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Executive Summary

Findings of Household Survey with Mothers/Caregivers

Age and sex of the children: The average age of the children of 6-59 months old in intervention areas is 26.0 months, which in comparison areas is 24.0 months. In intervention areas, 57.9 percent of the children are boys and 43.0 percent are girls. The corresponding figures in comparison areas are 54.4 percent and 48.0 percent respectively.

Episodes of childhood diarrhoea: Reportedly, 93.9 percent of the under five children in intervention and 93.0 percent in comparison areas have experienced a single episode of diarrhea and in most of the cases, above stated diarrhoea was continued for 2-3 days.

Knowledge of the mother/caregivers about diarrhoea: Any frequency of loose stool is perceived as diarrhoea to 99.8 percent of the mothers/caregivers both in intervention and comparison areas. However, 43.6 percent of them in intervention 42.1 percent in comparison areas perceive diarrhoea when a child passes at least 3 loose stools in a day.

Knowledge of mothers/caregivers on key manifestations of dehydration: Reported major manifestations are physical weakness (68.9%), loss of appetite (35.0%), sunken eyes (30.9%), and getting thirsty (21.5%) in intervention areas. Almost similar knowledge is also hold by the mothers/caregivers in comparison areas.

Knowledge of the mothers/caregivers about ORS: Although the mothers/caregivers are aware about ORS by name, 72.4 percent of them in intervention and 59.7 in comparison areas are able to explain the preparation of ORS correctly.

Knowledge of the mothers/caregivers on source of ORS: Primary sources of ORS are Satellite Clinic/EPI Centre (73.9% in intervention & 57.1% in comparison areas) and Community clinic (55.5% in intervention areas & 52.1% in comparison areas).

Knowledge of the mothers/caregivers about zinc: Half (49.5%) of the mothers/caregivers in intervention and more than that (54.8%) in comparison areas know about zinc supplement.

Knowledge of the mothers/caregivers about sources of zinc: The most pronounced sources of zinc is *Gram Daktar* with pharmacy (70.8% in intervention & 54.6% in comparison areas), followed by Community Clinic (48.6% in intervention & 45.1%) in comparison areas), Pharmacy (37.6% in intervention & 39.3% in comparison areas), and Upazila Health Complex (17.2% in intervention & 25.9% in comparison areas).

Knowledge of the mothers/caregivers about duration of treatment with zinc: Merely 15.0 percent mothers/caregivers in intervention and 20.4 percent in comparison areas reported correctly that zinc supplement is to be continued for 10 or more days.

Knowledge of the mothers/caregivers about benefit of zinc supplement: Majority of the mothers/caregivers in intervention (88.9%) and comparison (74.2%) areas believe that zinc supplement reduces the duration and severity of acute diarrhoeal episode.

Time of seeking treatment by the mothers/caregivers: Reportedly, two-fifth (43.4%) mothers/caregivers in intervention and half (50.5%) in comparison (50.6%) areas have sought

treatment on the very first day of diarrhoea. However, 41.6 percent in intervention and 40.9 percent in comparison areas did so on 2nd day of the diarrhea.

Where and whom consulted for treatment: Most of the mothers/caregivers in intervention (68.6%) and comparison (65.5%) areas took their children to the health facilities in private sector. Those who sought treatment from the healthy facilities of public sector were 27.1 percent in intervention and 33.2 percent in comparison areas.

Prescription and treatment by the service provider for acute childhood diarrhea: Reported first line of treatment at initial contact was ORS in both intervention (66.1%) and comparison (56.8%) areas. Combination of ORS and zinc was given to 24.8 percent children in intervention and 35.0 percent in comparison areas.

Compliance of mothers/caregivers to prescribed treatment: It is reported that 66.1 percent mothers/caregivers in intervention and 57.7 percent in comparison areas provide ORS to their children. Combination of ORS and zinc was given to 26.5 percent children in intervention and 36.1 percent in comparison areas, almost consistent with the treatment prescribed by the providers.

Supply and consumption of ORS: On an average, supplied ORS sachets in intervention and comparison areas were 3.6 and 3.9 respectively. Average number of ORS sachets consumed by the children was 3 in each of intervention and comparison areas.

Place of collection of ORS by the mothers/caregivers: Reportedly, 88.8 percent of ORS in intervention and 81.6 percent in comparison areas were collected from private sector, predominantly from Gram daktar, followed by pharmacy. In public sector, it was largely from CC.

Practice of the mothers/caregivers on using of zinc tablet: Overall, 15.0 percent mothers/caregivers in intervention and 17.6 percent in comparison areas had provided zinc tablet to their children with diarrhoea. Of them, 20.2 percent in intervention and 46.6 percent in comparison areas had provided zinc tablet for 10 days or more. Majority of them in intervention (66.7%) and comparison (87.9%) areas have given one tablet in a day after dissolving with water in a spoon.

Practice of the mothers/caregivers on using zinc syrup: Percentage of mothers/caregivers provided zinc syrup to their children with diarrhoea were 12.9 percent in intervention and 22.0 percent in comparison areas. Out of them, 21.2 percent in intervention and 16.6 percent in control areas had continued zinc syrup for 10 days.

Place of collection of zinc tablet and/or syrup: Most of the mothers/caregivers in intervention (62.6%) and comparison (63.8%) areas had collected zinc tablet from Community Clinic and syrup from *Gram Daktar* with pharmacy (55.3% in intervention & 55.9% in comparison areas).

Taste of zinc tablet and syrup: As high as 95.3 percent children in intervention and 75.9 percent in comparison areas like the taste of zinc tablet.

Side effects of zinc and health seeking behaviour: A few children in intervention (9.2%) and comparison (6.9%) areas have experienced side effect after administration of zinc. Majority of the mothers/caregivers in intervention (58.8%) and comparison (38.9%) areas

have consulted with qualified medical practitioner, and some 23.5 percent in intervention and 33.3 percent in comparison areas have stopped zinc supplement.

Future Intention of the mothers/caregivers in using zinc: Almost all the mothers/caregivers in intervention (96.7%) and comparison (97.3%) areas have expressed their intention to use zinc again.

Home visit by the health workers: According to 97.4 percent mothers/caregivers in intervention and 93.3 percent in comparison areas, none of the health workers has visited to their home at the time of last diarrhoeal episode of their children.

Findings of Interviews with Health Workers

Age and sex of the health workers: The median age of the health workers in intervention and comparison areas is 33 years and 31 years respectively. Majority of them in intervention (69.2%) and comparison (62.1%) areas are female.

Education of the health workers: Reportedly, 38.4 percent health workers in intervention and 32.2% in comparison areas have passed the secondary school certificate examination (HSC). However, 29.3 percent of health workers in intervention and 15.7 percent in comparison areas are master degree holder.

Basic training of the health workers: Most of the health workers in intervention (64.1%) and comparison (47.0%) areas have received basic training two years ago and more than 28.0 percent in intervention and comparison areas received it for more than 5 years ago.

Knowledge on diarrhoea: Reportedly, 52.5 percent health workers in intervention and 73.2 percent in comparison areas know that at least three loose or liquid stools per day is required to call it diarrhoea. Other reported findings of diarrhoea in interventional and comparison areas are abdominal pain dizziness from dehydration vomiting.

Knowledge on manifestations of dehydration: Reported key manifestation of dehydration in intervention (82.8%) and comparison (68.7%) areas is sunken of eyes, followed by loss of skin turgidity (60.6% in intervention areas & 58.6% in comparison areas) and dryness of tongue (42.4% in intervention areas & 43.4% in comparison areas).

Knowledge on benefit of zinc supplement: Reported advantages of zinc supplement are reduction of duration and severity of diarrhoea (64.1% in intervention & 51.0% comparison areas), improvement of appetite (63.1% in intervention areas & 57.6% in comparison areas) and replacement of zinc lost in stool (46.5% in intervention areas & 54.5% in comparison areas).

Knowledge on course and dosage of zinc supplement: According to 49.0 percent health workers in intervention and 55.6 percent in comparison areas zinc should be continued for 10 days or more even after stop of diarrhoea. Of them 62.3 percent in intervention and 78.2 percent in comparison areas know the recommended dose of zinc is 20 mg per day for children aged 6 months and above.

Knowledge on preparation of ORS: Reportedly, 99.0 percent of the health workers in intervention and 99.5 percent in comparison areas have claimed that they know the method to prepare ORS.

Knowledge on procedure to administer dispersible zinc tablet: Reportedly, 53.5 percent health workers in intervention and 56.1 percent in comparison areas know how to disperse the zinc tablet in a liquid (breast milk, ORS solution or water) before giving it to the children.

Practices in the management of childhood diarrhoea: The most pronounced therapy for the management of acute diarrhoeal episode in intervention (58.6%) and comparison (61.1%) areas is combination of ORS and zinc, followed by simply ORS to 35.9 percent childhood diarrhoea in intervention and 33.3 percent in comparison areas.

Practice of zinc supplement in last one month: Reportedly, 66.7 percent health workers in intervention and 73.2 percent in comparison areas have given zinc supplement to diarrhoea affected child.

Household visit of the health workers: It is reported by 54.0 percent health workers in intervention and 65.2 percent in comparison areas have visited the houses of the diarrhoea affected children.

Receipt and distribution of ORS sachets at the health centre: The reported average number of ORS sachets received at health facility in intervention and comparison areas is 312.2 and 459.1 respectively. Average number of ORS sachet that has been distributed to the clients in last month is 196.7 and 183.5 in intervention and comparison areas.

Stock-out and stock-in at present of zinc and ORS: Reportedly, current average stock-in of zinc blister packs with a health worker in intervention and comparison areas is 101.3 and 153.7. Average stock-in of ORS sachets with a health worker in intervention and comparison areas is 388.1 and 691.5. However, 8.1 percent of the health workers in intervention and 7.6 percent in comparison areas could not distribute zinc tablet and 5.6 percent of health workers in intervention and 8.6 percent in comparison areas could not distribute ORS to the clients due to run out of supply in last month.

Knowledge on estimating demand of zinc and ORS in respective area: Merely 8.1 percent in intervention and 5.6 percent in comparison areas know how to calculate demand estimation.

Conduction of group counseling session Some 71.7 percent health workers in intervention areas and 62.1 percent in comparison areas have reported to conduct group counseling session with the mothers/caregivers.

Finding of Interviews with Health Supervisors

Health supervisory tasks are dominated by females and most of them are aged more than 45 years in both intervention and comparison areas. The present knowledge level on diarrhoea management among health supervisors in intervention areas is poor. Merely 18.2 percent health supervisors in the intervention areas and 50 percent health supervisors in the comparison areas have knowledge on the correct dosage of zinc tablets. Some 45.5 percent of the health supervisors in the intervention areas and 57.6 percent in the comparison districts have knowledge on correct duration zinc tablet to be taken for 10 days. The knowledge on benefits of zinc is known to 54.5 percent health supervisors in intervention areas and 72.7 percent in comparison areas. Some 43.9 percent of the health supervisors in intervention and 69.7 percent in comparison areas have knowledge about the reason for continuation of zinc for 10 days duration even if diarrhoea stops.

By and large, the health supervisors undertake at least one visit in a month for supervision/monitoring. Some 19.7 percent supervisors in intervention 48.5 percent in comparison areas visit once in a month to supervise the duties frontline health workers. However, 13.6 percent in intervention and 10.6 percent in comparison areas undertake a visit fortnightly, and 27.3 percent in intervention and 13.6 percent in comparison areas do that once in a week. Almost half (51.5%) of the health supervisors in intervention areas and 40.9 percent in comparison areas conduct home visits. Very few (5.9%) of them in intervention and 18.5 percent in comparison areas use BCC materials during home visits or supervision of their staffs.

There have been very few reports of stock out in both intervention and comparison areas but such incidence was duly reported to the higher officials. Only 2.9% supervisors monitor the compliance of the caregivers. Only one in 21.2 percent supervisors in intervention and 13.6 percent in comparison areas receive complete monthly report on time.

Finding of Interviews with *Gram Daktars*

As high as 87.9 percent of the *Gram Daktars* in intervention 92.4 percent in comparison areas perceived diarrhoea with at least three loose stools per day. Reportedly, correct knowledge of zinc supplement of 20 mg per person per day is known to 43.9 percent *Gram Daktars* in the intervention and 62.1 percent in the comparison areas. Knowledge on recommended course of zinc for 10 day or more is known to 40.9 percent *Gram Daktars* in intervention and 48.5 percent in comparison areas. At least two reasons for continuation of zinc for 10 days are known to 39.4 percent of them in intervention and 59.1 percent in comparison areas. A quite large (69.7%) proportion of *Gram Daktars* in intervention and more so (83.3%) in comparison areas know the preparation method of dispersible zinc tablet correctly. Additionally, 63.6 percent of *Gram Daktars* in intervention and 90.9 percent in comparison areas are aware about the benefit of zinc in acute diarrhoea. Apart from zinc, 60.6 percent *Gram Daktars* in the intervention areas and 69.7 percent in comparison areas have correct knowledge on preparation method of ORS

In general, 47.4 percent *Gram Daktars* in the intervention and 58.8 percent in the comparison areas have prescribed both zinc and ORS. Some 16.7 percent in the intervention and 23.7 percent in comparison area have prescribed ORS only. Besides ORS and zinc, 21.7 percent of them in intervention areas and 21.1 percent in comparison areas have prescribed antibiotic and antiprotozoal medicines as well.

In order to improve the coverage and compliance of zinc in their areas, followings are the key suggestions made by the *Gram Daktars* interviewed.

- ✓ Establish a good relation with the mothers/caregivers (36.4% in intervention & 34.8% in comparison areas)
- ✓ Provision of zinc tablets and ORS to the all health facilities (18.2% in intervention & 62.1% in comparison areas)
- ✓ Adequate counseling for clear information to the mothers/caregivers on dosage, use, benefits and administration of zinc and ORS (48.5% in each of intervention & comparison areas) and
- ✓ Follow up home visits (13.6% in intervention & 15.2% in comparison areas).

Findings of Interviews with Health Managers

The program to improve the coverage and compliance of zinc and ORS among diarrhoeal children is not yet implemented in most of the intervention districts, and where implemented, it is in a very initial stage. According to the health managers, total success of the program is largely depends on appropriate training of the frontline workers on zinc and ORS. Additionally, the role of counseling by the frontline workers is also very much effective. Currently none of the health manager is involved in monitoring the MI initiated program on 'scaling up the use of zinc and ORS in the treatment of diarrhea'. In the monthly coordination meeting at UHC, there is no special discussion on childhood diarrhea and its challenges in providing zinc supplement together with ORS to every child with diarrhea. Health managers do not have any idea on IEC/BCC materials related to this program. To achieve success in program implementation, following are the suggestions provided by them: (1) intensive training of health workers as well as refreshers session regularly; (2) advocacy meeting with the other officials, local govt. representatives, community leaders and religious leaders; (3) effective monitoring of the program activities using checklist and other appropriate tools; (4) assigning focal point; (5) ensure adequate supply of zinc and ORS in every CCs, FWCs UHCs; (6) establish regular home visit by the health workers and meeting with the mothers/caregivers and (7) inclusion of NGOs health workers in this program.