

Exploring Barriers to Uptake of Micronutrient Powders in Rural District, Zimbabwe: Findings from a Qualitative Study

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Abstract

Zimbabwe is implementing a micronutrient powder program, which was designed to improve micronutrient supplementation to children aged 6-23 months. One year after program inception, there are indications that uptake of micronutrient powders is very low. Thus, the study sought to identify barriers to uptake of micronutrient powders in Makoni rural district. This was achieved through phenomenology philosophy and case study design. Three villages from rural Makoni district, 11 focus groups and 20 in-depth interviews were done. Key informants included caregivers, community leaders, community health workers, health professionals and key stakeholders implementing the micronutrient powder program. Interviews were digitally recorded, transcribed and thematically analysed using Coding Analysis Toolkit. Findings from the study show that barriers to uptake of micronutrient powders are poor accessibility; lack of adequate information on potential micronutrient powder side effects and poor post distribution monitoring; poor social mobilization and food unavailability. The study recommends that nutrition related programs in Zimbabwe should consider improving accessibility of micronutrient powders by considering community distribution points for micronutrient powders. In addition, nutrition related programs should consider providing adequate information on potential side effects of micronutrient powders and provide micronutrient powders as ready to eat supplements to bridge food unavailability gap.

Keywords: Barrier, micronutrient powders, infant and young child feeding, social and behaviour change communication, Zimbabwe.

Introduction

Micronutrient deficiencies affect 1.2 million children every year global ((Michaux et al, 2014) and regions such as Africa, South-East Asia, and Eastern Mediterranean have an alarming rate of 62%, 54% and 48% respectively of children aged 6–59 months with anaemia (WHO, 2011). Fifty percent of anaemia cases are mostly caused by iron deficiency (Magalhães et al, 2011). In Zimbabwe, 72% of children aged 6-59 months are iron deficient and 31% are anaemic (The Zimbabwe National Nutrition Survey Report, 2018).

According to Michaux et al (2014) micronutrient deficiencies of vitamin A, zinc, iron, and iodine are associated with under-five mortality. Thus, the Ministry of Health and Child Care and UNICEF Zimbabwe initiated a micronutrient supplementation program to children aged 6-23 months in eighteen rural districts. The program was designed to improve micronutrient supplementation to children aged 6-23 months. Caregivers of children aged 6-23 months collect 15 sachets of micronutrient powders (MNPs) at health facilities to add to complementary feeds every other day per month.

Even though micronutrient powders are supplied for free to caregivers at health centres, their uptake remains low. Since the commencement of the micronutrient program in October 2017, only 40% of children had received MNPs by May 2018 in Makoni district. This is lower than the targeted 100% of children aged 6-23 months having received MNPs. This study seeks to identify barriers to uptake of micronutrient powders (MNPs).

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Methodology

The study conducted 20 in depth interviews which comprised of 6 in-depth interviews with community leaders, 9 in depth interviews with caregivers (3 caregivers in each village) and 5 in depth interviews with key stakeholders (district health promotion officer, community health nurse, district nutritionist, nutrition ward coordinator and village health worker). Key informant interviews were held in July 2018 over a period of 10 days by 3 trained research assistants. The in-depth interviews lasted between 25 to 35 minutes. Key informant interviews for caregivers and community leaders were conducted in the community. In depth interviews with key stakeholders were conducted in working environments where interviewees were most comfortable.

Eleven focus group discussions (FGDs) were held in the community in July 2018 over a period of 10 days. Total of 120 participants participated in focus group discussions. Focus group discussion guide was used to guide the discussions. Participants assumed a circular sitting arrangement for ease of moderation during the discussion. A focus group ranged in size from 7 to 12 participants each. Three trained research assistants facilitated FGDs which were either all male or all female to allow in depth discussion of issues which may result in low uptake of micronutrient powders. Each focus group was homogenous in that it represented a certain characteristic by societal role and responsibility. Focus group discussions lasted between 60 to 80 minutes. Complimentary written notes were taken by the assistant moderator during focus group discussions to capture thematic issues emanating from the discussions.

Focus group discussions and KIIs were tape-recorded with permission of participants. Anonymity of participants in the focus groups was protected. In some instances, the use of "they" or "their" as the first person singular pronoun was chosen to further protect the identity of participants and to illustrate how their statements are representative of many focus group participants. Focus group and key informant interview data went through several phases of analysis. A preliminary analysis was conducted with three data collectors immediately after the focus group discussion to get a general sense of the data and reflect on its meaning.

Next, transcription of the digitally recorded interviews was done. Transcripts from FGDs and KIIs were entered in Coding Analysis Toolkit and key thematic areas which emerged from discussions and in-depth interviews with participants on MNPs were identified (Siedel, 1998; Munyoro, 2014). As suggested by Seidel and Kelle (1995) and Munyoro (2014) a list of topics was generated, and the topics were compiled into categories that were labelled as key findings. Analysis of the findings showed significant consistency in how the issues were raised by participants from both FGDs and KIIs (Seidel, 1998; Munyoro, 2014). Where an issue was addressed by key informants but talked about differently, differences in talk are identified and explained (Gibbs, 2002; Munyoro et al, 2016).

Data analysis

Focus group and key informant interview data went through several phases of analysis. A preliminary analysis was conducted with three data collectors immediately after the focus group discussion to get a general sense of the data and reflect on its meaning. Next, transcription of the digitally recorded interviews was done. Transcripts were entered in Coding Analysis Toolkit and key thematic areas which emerged from discussions and in-depth interviews with participants on MNPs were identified. A list of topics was generated, and the topics were compiled into categories that were labelled as key findings. Analysis of the findings showed significant consistency in how the issues were raised by participants from both FGDs and KIIs. Where an issue was addressed by key informants but talked about differently, differences in talk are identified and explained.

Results

Poor accessibility of MNPs

Participants mentioned that MNPs were distributed at health facility level only. This provided a challenge in collection of MNPs by caregivers and in some cases resulted in stock outs of MNPs. According to one caregiver:

"It is difficult to travel for more than 10 km to collect sachets of MNPs only. As caregivers, we have multiple roles in taking care of our families."

According to one community leader, caregivers experience stock out because they do not see the need to travel long distances for sachets. The community leader had this to say:

"Caregivers often mention that they can't travel just for sachets of MNPs only."

Focus group participants suggested that MNPs could be distributed at village level by village health workers. Community leaders who were interviewed mentioned that sometimes physical barriers (especially during rainy season) prohibited recollection of MNPs by caregivers at the health facility.

Poor social mobilization

Key informants mentioned that lack of awareness raising programs for private sectors, community leaders, and secondary target population on MNPs may result in low uptake of MNPs. They pointed out that few community campaigns were done to inform communities about MNPs due to lack of adequate funds. Key informants mentioned that implementation of social mobilization efforts to improve uptake of MNPs should be a planned and budgeted activity which requires collaborative effort from all key stakeholders. According to one key informant:

"We did not do demand creation activities to improve uptake of micronutrient powders. This is one of the reasons why uptake of micronutrient powders remains low."

Participants pointed out there were very few community groups where caregivers could discuss and learn from each other. As a result, community mobilization on MNPs was poor. They viewed that community groups are important as mothers could share their experiences and encourage one another. Participants mentioned that mother support groups and care groups could be used to provide community platforms where they discuss issues concerning MPNs and nutrition. One caregiver opined that:

"We used to have community groups to discuss health problems for children. It is no longer the case."

Key informants mentioned that social mobilization activities carried out so far in some districts are mostly community meetings. They mentioned that most community activities were community meetings which are done in convenient places, which may not target caregivers of concerned age group.

"There are some caregivers who stay 25 kilometres away from the health facility. Community meetings must also be done in these far away villages. Most meetings are held close to the health facility area where health workers can attend"

Additionally, key informants pointed out that few capacity building activities on interpersonal communication were conducted due to lack of funds to conduct trainings on MNPs. To ensure social mobilization activities are successful, participants stated that community engagement activities need adequate financial resources.

Lack of adequate information on MNPs

Participants mentioned the lack of availability of education materials with information on vitamins and minerals available in MNPs, importance of MNPs to children of specific age groups, information on side effects which may arise and how to deal with side effects. Most participants had not received print education material on MNPs.

"We need information on use, importance and potential side effects of MNPs. We can ask our children to read for us when we get home. This will help us remember when we forget something."

Focus group participants reiterated that there was conflicting information between information given by health workers and that on the sachets. They mentioned that key message on the sachet was that MNPs should be administered every day whilst health workers mentioned that MNPs should be given every other day. Hence the need to make sure that information on MNPs sachets and from health workers is the same.

On information, education and communication material preferences, participants mentioned that they preferred information in form of posters, flyers and pamphlets in vernacular language. Such information should be reinforced with interpersonal communication (IPC) by community health workers. Furthermore, participants reiterated the need to complement developed information, education and communication material with information, communication and technology (ICT) methods. Such

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methods mentioned include short messaging system, short videos for wat's up platforms, print, television, and radio communication.

Side effects of MNPs

Some focus group participants mentioned that children experienced side effects after adding MNPs to food. Diarrhoea, vomiting, hot body and constipation were cited by caregivers. According to one caregiver

"My child experienced vomiting after giving them food added with MNPs. I immediately stopped giving the child food added with MNP as this was not safe for my child."

Probed whether the caregiver sought help from health workers, she mentioned that:

"I did not know what to do, the community health worker stays far away and I could not ask other mothers what their experiences were since my child had reacted to MNPs."

Upon further probing on workable solutions, the caregiver pointed out that she had stopped giving MNPs to her child. The participant went on to say:

"We need information on the side effects and what we must do should our children face any side effects."

Lack of post-distribution monitoring

Most caregivers pointed out there were no follow up visits from village health workers and health workers post distribution of MNPs. They mentioned that some caregivers had discontinued use of MNPs after experiencing side effects. According to one caregiver:

"We want to meet health workers at home so that we can discuss challenges which we face, especially soon after using MNPs. Sometimes there is no one to ask since at the community we are the same."

They mentioned that post distribution follow-up should occur after a few days, to allow for caregivers to discuss issues of concern. Few caregivers mentioned that nutrition ward coordinator followed up at their household post distribution. Key informant interviewees mentioned that lack of financial resources to conduct follow up visits resulted in poor monitoring post distribution.

Key informants mentioned that limited capacity and availability of trained resource people may hamper post-distribution monitoring. Village health workers overloaded with community work. They mentioned that village health workers are the point of community entrance for all community programs, and that they are volunteers. As a result, village health workers only follow up a few households.

Food unavailability

Most participants mentioned that they could not afford to buy food, as a result, they sometimes did not use MNPs at all. They reiterated that MNPs must be added to semi solid food, which may not be available at the household.

"Micronutrient powders must be added to food for the child to eat them. Sometimes we do not have food at home, so we do not give MNPs. Unless the MNPs are provided in food form."

Caregivers pointed out that the type of food available at the household is in solid form, that is sadza and sweet potatoes. Hence, giving MNPs to children may be a challenge. Participants mentioned that food unavailability was due to the low harvests experienced during drought.

Discussion

Key findings from the study showed that poor access of MNPs reduce uptake of micronutrient powders. In other studies, conducted by Kea *et al.*, 2018, accessibility of a health product is important in use of the service. The study found out that accessibility of maternal health services at distant health facilities was problematic. Accessibility to health facilities was problematic due difficult terrain and large catchment area served by a health facility (Kea *et al.*, 2018).

Poor social mobilization resulted in lack of community awareness on MNPs, resulting in low uptake. Similar findings from previous study done in Kenya by Kodish *et al.*, (2011), several factors affect social mobilization activities. The study mentioned that lack of interagency coordination led to insufficient social marketing before the micronutrient program began. Also, the study found out that

community health workers were inadequately trained which resulted in inadequate communication regarding health benefits and use of micronutrient powder to the beneficiaries.

Focus group participants from this study mentioned that messages on MNP usage were not clear. Kodish *et al.*, 2011 opine that messages are part of social mobilization program design features which influence caregiver knowledge and adherence. In addition, these messages should have the correct content, clarity, and cultural appropriateness of the information.

Other studies reported that side effects of MNPs were a reason for not giving MNPs to children. Studies from Bangladesh (Karim *et al.*, 2006, Hyder *et al.*, 2007) reported that change in colour and consistency of stool as common side effects in children. A cluster randomized trial from Pakistan showed that use of MNPs was associated with a significant increase in diarrhoea incidence (Soofi *et al.*, 2018), as a result caregiver did not use MNPs. This shows that side effects of MNPs may cause low uptake of micronutrient powders.

In other studies, by Mirkovic *et al.*, 2016, mothers perceiving ≥ 1 positive effects in their child after MNP use was also associated with high intake (OR=6.55, 95 % CI 4.29, 10.01). However, perceiving negative affects was not associated with low uptake. The study found out that child preference on MNPs lower odds of high of MNPs (OR=0.12, 95 % CI 0.08, 0.20) Mirkovic *et al.*, 2016.

Participants in this study mentioned that the lack of information, education, and communication material (IEC) for use in interpersonal communication may affect knowledge on MNPs. According to Jolly *et al.*, 2016, even though IEC material were useful for illiterate women, there were limitations found using printed materials in maternal and child health programme intervention in rural Bangladesh.

Limited mobility of community health workers to visit clients who may need resupply, and experiencing side effects after usage of MNPs were mentioned as barrier to uptake of MNPs. Creed-Kanashiro *et al.*, (2015) conducted a qualitative study and explored the role of health personnel in three regions. Results from the study showed that home visits were key in promoting usage of MNP by caregivers since misunderstandings on preparation, required consistency and optimum practices were common. In the same study, health workers were found to play a critical role in influencing caregiver understanding, use of the MNP, training to avoid confusing messages and provide counselling to families on local feeding routines.

After distribution of MNPs, participants mentioned the need for monitoring MNP activities. In a study conducted by Angdembe *et al.*, 2016, community health volunteers are the key to improving uptake of MNPs through regular visits to households. Post distribution monitoring visits provides opportunity for discussions of problems, encouragement of continued MNP consumption, and recommendations for regular child health care via health care centres.

Unavailability of food was mentioned as barrier to uptake of MNP. Caregivers mentioned that available food was mostly in solid form. The nature of food as semi-solid and liquid were mentioned by participants in improving uptake of MNPs. Creed-Kanashiro *et al.*, (2015) conducted a qualitative study explored the acceptability of MNP by caregivers, the study found out that there was greater acceptance of MNP by caregivers giving semi-solid foods (e.g. purees) to their children than those who served dilute preparations (e.g. soups).

Conclusion

Administering micronutrient powders to children aged 6-23 months remains a key priority to improve micronutrient supplementation to children. In this study, qualitative research was employed to identify key barriers to uptake of micronutrient powders. Poor accessibility of MNPs, poor social mobilization, lack of information, education and communication and food unavailability resulted in low uptake.

There is need to institute MNP distribution platforms at community level and develop social mobilization activities to address lack of information and community awareness. Nutrition program planners must consider providing MNPs as ready to eat supplement form, to bridge food unavailability at household level. Action at these levels will improve uptake of MNPs and hence micronutrient supplementation to children.

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