Journal of
Nutritional Ecology and Food Research
Vol. 4, 1–8, 2017

Child Feeding Practices and Factors (Risks) Associated with Provision of Complementary Foods Among Mothers of Children Age 6–23 Months in Dedza District of Central Malawi

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Prevalence of stunting among children in Dedza district of Central Malawi affects 51.1% of underfive children and 47.1% of children aged 6 to 23 months. Evidence shows that appropriate complementary feeding reduces stunting and leads to improved health and growth outcomes. In Dedza district, information on factors contributing to the high prevalence of stunting among children is nonexistent. The study was conducted to investigate infant and young child feeding practices and to identify factors (risks) that might contribute to undernutrition. Findings of the study would assist in identifying strategies for improving child feeding practices and nutritional status in the district. Four community-based focus group discussions (FGDs) with mothers and caregivers were conducted to gain a comprehensive understanding of child feeding practices and the safety of the foods given to the children. We found that the majority of mothers and caregivers had low levels of education and about 80% of mothers prepared complementary foods from maize flour only. Addition of other foods such as beans, soybeans and groundnuts to complementary foods was rare. Timely initiation of complementary feeding was practiced by 77.1% of mothers, 8.6% introduced food earlier and 14.3% introduced later than six months. About 45% of children had diarrhoea which was associated with poor hygiene practices and poor storage of complementary food. Factors leading to poor complementary feeding included lack of food diversity at household level, increased work burden of mothers and caregivers which led to reduced feeding frequency and inadequate knowledge of mothers to process and prepare nutritious complementary food. It is therefore recommended that to reverse the situation, mothers and caregivers should be trained on use of energy and time saving technologies, hygiene practices, food processing, preparation and appropriate child feeding practices.

Keywords: Complementary Food, Malnutrition, Meal Frequency, Hygiene Practices, Diarrhoea.

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1. INTRODUCTION

Prevalence of chronic malnutrition affects 156 million underfive children globally and the largest numbers are in Asia (56%) and Africa (37%).[1] Malnutrition contributes to 45% underfive deaths worldwide and more than 33% in Sub Saharan Africa.[2] In Malawi 47.1% of underfive children are stunted, 16.3% underweight and 3.1% wasted.[3]

Dedza district in Malawi has one of the highest proportion of stunted children with 51.1% of underfive and 47.1% of the children aged 6 to 23 months affected.[3] The effects of climate change in Malawi such as frequent occurrence of floods and intermittent droughts have not spared Dedza district. Various nutrition related interventions have been implemented in response to these effects; however, the levels of undernutrition in children have remained high and some localized studies have singled out poor child care and inadequate complementary feeding practices as important factors contributing to high prevalence of undernutrition among the children.[4] However, in Dedza district, information on the factors that contribute to high prevalence of undernutrition among young children is nonexistent. Therefore, the study was conducted to

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investigate infant and young child feeding practices and to identify factors (risks) that might contribute to high prevalence of stunting. The findings of this study would assist in identifying strategies for improving child feeding and nutritional status of children in the district.

2. MATERIALS AND METHODS

The study was conducted in Mayani Extension Planning Area (EPA) in Traditional Authority (TA) Tambala in Dedza district in Central Malawi in October 2015. The research team consulted the local Agricultural office in Mayani EPA to identify two villages where the study was to be conducted. With the guidance of the Agricultural Officers, the research team approached the local traditional leaders of the two selected villages to introduce the data collection process. Verbal consent was obtained from the traditional local leaders and households with children aged 6–23 months were identified to participate in the study. The two villages were selected because they had high numbers of the eligible children according to the information provided by the local leaders who are the custodians of records of their communities. Information was sent in advance to the households that were selected to participate in the study before the day of the discussions.

Four community-based focus group discussions (FGD) with mothers and caregivers were conducted in the areas where the participants lived to gain a comprehensive understanding of child feeding practices and the safety of the foods given to the children. In this study we defined a caregiver as any adult female person who was responsible for the day-to-day care and wellbeing of a child aged 6 to 23 month(s). A focus group discussion approach was used to gain in-depth information on the feeding practices prevalent in the area and the factors associated with poor feeding practices.

The research team consisted of three members; the researcher and two research assistants. Participants to FGDs were purposively targeted and selected. The following were the inclusion criteria: a mother with children/child aged 6 to 23 months, permanent resident of the area, residing in the area for at least two years and consented to participate in the discussions. We used a FDG guide which consisted of the following topics: types of foods used locally as complementary foods by the communities, ingredients used to prepare complementary foods, the form in which the food is given to children, methods of preparing the foods, steps followed when handling the foods during processing and storage, utensils and facilities used for storage of food. Information was also collected on different sources of food and other factors that influenced the choice of food given to children. During the discussions observations were made on body expressions in relation to responses given on feeding practices that would be considered as risks to the health of the children. After the focus group discussions, the research team moved around the households to observe the status of the households in respect of sanitation and hygienic practices. The research team looked for general sanitation of the household surroundings, hygienic practices when handling utensils for preparing and serving food and the process of preparing the food. A short questionnaire was used to collect information from selected individual mothers or caregivers on hand washing practices, personal hygiene, water sources and storage and prevalence of diarrhoea among young children.

2.1. Data Collection

Four FGD were conducted in each village comprising of 10, 10, 10 and 9 participants taking part respectively giving a total of 39 participants. The discussions were held in an open and relaxed environment because the participants were familiar with each other. The research assistants recorded the proceedings of the FGD in notebooks. The local language spoken in the area (*Chichewa*) was used during the FGDs to make sure that all participants were following the discussions. The notes were then transcribed and translated into English by the researcher. After the FGDs were completed, the researcher and the two research assistants had round table discussions to synthesize and analyze emerging themes from the transcripts. Data were also collected from randomly selected households on sanitation, hygiene practices, water sources and storage, and prevalence of diarrhoea among young children.

2.2. Ethical Review and Approval

An application was made to the National Health Sciences Committee (NHSC) of Ministry of Health in Malawi and an approval was obtained to conduct the study under protocol: NHSRC#15/4/1432. Written approval was also obtained from the Director of Agricultural Extension Services (DAES) in Ministry of Agriculture, Irrigation and Water Development to allow the research team to enter the communities through the Extension Planning Area office. During the FGDs, oral consent was obtained from all the participants after explaining all the procedures and types of information that was to be discussed. Participants were also assured of confidentiality that their names were not going to be mentioned in the write-up of the proceedings.

2.3. Data Analysis

The qualitative data FGDs were transcribed, coded and interpreted to explain community knowledge, attitude and child feeding practices. Thematic analysis was used to reflect emerging concepts that feed into the various components of child care and feeding practices. To come up with coding categories, members of the research team separately read through the first FGD interview transcript translated into English and made notes on the main themes that were emerging from the discussions. The team revised the themes identified by the individual members to find

the common themes that clearly explained factors that affected child feeding practices in the communities. The team determined the final themes that explained factors that affect child feeding practices in the research area. Data collected with a questionnaire from the households were entered into SPSS and analysed using frequencies and cross-tabulations. Chi square test was used to determine association between categorical variables.

3. RESULTS

Results showed that over two fifth (42.8%) of mothers had given birth to between three and six children while two fifth (40%) had given birth to at least one child. Table I presents information on the social and demographic characteristics of the participants to the focus group discussions.

About 22.9% of mothers and caregivers were either divorced or single (Table I). Usually households headed by women are associated with poverty and are at risk of food insecurity because they are constrained in terms of production resources.[5] Such households may not have the capacity to produce diversified foods and therefore fail to prepare diversified diets. The majority of mothers reported that they had low attainment of education (94.3%). Studies have shown that mothers with low education attainment are slow to adopt new innovations while well educated mothers have better child care and feeding practices.[6]

Factors (risks) likely to contribute to poor child feeding practices and malnutrition. During FGD with mothers, five themes were identified which explained factors that might lead to poor child feeding practices and malnutrition. The themes included types of foods available in communities, maternal knowledge on complementary feeding, influence of culture on child feeding.

3.1. Types of Foods Available in the Communities

Mothers and caregivers explained that households in Dedza district had access to the following foods in line with the Malawi six food groups: Staples included maize, cassava and potatoes; Legumes such as groundnuts, common beans (*Phaseolus vulgaris*) and soybeans (*Glycin max*); vegetables such as pumpkins, okra, black jack, cat whiskers, amaranth, cassava leaves and sweet potato leaves, tomatoes and carrots. Foods from Meats and meat products were rarely consumed and the common sources were poultry, goats, and pigs and fish. Some participants consumed different types of fish along with the dishes of staple food. These foods mainly formed the family meals for adults and older children. The following are some of the statements from FGD which demonstrate factors that may lead to poor child feeding practices.

- FGD 1: "Most of these foods are consumed by adults and older children and they are not given to young children who need only porridge from maize flour."
- FGD 2: "We do not mix different types of foods when preparing meals because it may lead to wastage of food. If we have meat, that day we will not eat vegetables because the meat will be enough."
- FGD 3: "Most households do not have access to diversified foods because of lack of inputs such as seeds and fertilizers for production."
- FGD 4: "We are poor in this village. We cannot afford to include meat in our diets because one needs to buy from the market. Most of the time we consume monotonous meals made of maize flour and vegetables. Young children are given watery porridge which is easy to swallow."

Maize flour was the most commonly used foodstuff for preparing complementary foods for infants and young children; the common one being porridge (97% maize extraction) which is low in energy and provides 25.1 Kcal of energy instead of 36.1 Kcal per 100 g[7] and may not meet the energy and nutrient requirements of the child. Mothers indicated that sometimes groundnuts, beans and soybeans were added to the maize flour. The majority of mothers (98%) prepared maize flour by milling the maize after removing the husks and fermenting for at least two days (white flour or *ufa woyera*). Sometimes maize is milled without removing the husks.

Table I. Socio-demographic characteristics of FGD participants.

Characteristics	*n*	%
Marital status		
Married (polygamy)	4	11.4
Married (monogamy)	23	65.7
Divorced	5	14.3
Single	3	8.6
Education level		
None	3	8.6
Adult literacy	1	2.9
Standard 1 to 4	14	40.0
Standard 5 to 8	15	42.9
Junior secondary school	2	5.7

3.2. Knowledge of Complementary Feeding Among Mothers and Caregivers

During the FGD the majority (94.3%) of mothers reported that complementary foods should be given to the child at the age of 6 months. Mothers mentioned the following as sources of information on recommended complementary feeding: health facilities (74.3%), friends (20%) and mothers (5.7%). However, 8.6% of mothers introduced complementary food earlier than six months and 14.3% introduced later than six months. The following are statements recorded during FDG that demonstrate some of the factors that lead to poor child feeding practices among mothers and caregivers.

- FGD 1: "When the mother discovers that she is pregnant, she is supposed to terminate breastfeeding immediately. In this case, the child should be given complementary food even if the child is below six months of

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age. If a mother who is pregnant breastfeeds her child then the child will fall sick."

- FGD 2: "Some children do not get enough breast milk and they cry more frequently. Introducing complementary foods early ensures that children eat enough food and they stop crying."
- FGD 3: "During periods of food scarcity, the children are badly affected because there is no maize which is normally used for preparing complementary foods. Adults are better off than children because they consume different types of foods to survive the scarcity of the common staples. Infants and young children would still require porridge from maize."
- FGD 4: "When food is scarce, we reduce the quantity and frequency of feeding the children in line with the food that is available."

These statements imply that food scarcity and lack of diversity lead to reduced frequency of child feeding which exposes the children to inadequate energy and nutrient intake and put them at risk of undernutrition.

3.3. Influence of Culture on Complementary Feeding

Mothers and Caregivers were asked to explain the roles of men in feeding the children. It was found that in all communities men did not have a direct role in feeding the children. Culturally men were looked at as providers in the home and the task of feeding children was left to women. The following statements demonstrate how cultural practices affect child feeding practices in the study area.

- FGD 1: "Mothers are the ones responsible for feeding children. Men cannot know how to handle a child."
- FGD 2: "Mothers are the ones who stay near the fire, preparing food for the family. It is not respectful for a woman to allow a man to prepare complementary food while she is around."
- FGD 3: "The mother is the one who stays with the child all the time and she is the one who should be responsible for feeding the child."
- FGD 4: "Men's responsibility is to provide resources for the family and not preparing food. As long as the man is providing money to the household, a woman is happy to prepare and provide for the meals."

These expressions reflect the cultural perceptions that exist in Dedza District on the roles of men and women on child care and feeding practices. The statements also show that communities believe that women are the ones who should cook food and not men. In the perceptions of women, it is imperative that women should be the ones responsible for feeding children. It is apparent that in a community that is agro-based and where the majority of women work on the farms, it would be difficult to feed children adequately and frequently as mothers alternate roles of caring for children and working on the family farms.

3.4. Other Related Factors

3.4.1. Poor Knowledge of Processing of Maize and Legumes into Flour

During FGD, mothers and caregivers reported that there were no standard procedures followed during processing of maize and legumes into flour for preparing complementary food. The majority of mothers and caregivers (90%) mixed groundnuts and maize before milling into flour while 10% added groundnut flour to porridge during cooking. The proportions of mixing maize and groundnuts or soybeans differed among mothers. The ratios varied from 2:1, 3:1 and 5:1. This is contrary to the recommended ratio of 4:1 (maize to soybeans) that is officially recognized by the Malawi Government.[8] The mixtures of maize and groundnuts or soybeans are then milled together into flour for preparing porridge for the children.

Before processing the flour, the majority of women (90%) winnowed the maize to remove dust, stones, rotten grains and other contaminants. Where groundnuts were used, all high quality groundnuts were normally sold and only the shriveled, discoloured and damaged groundnuts were processed into flour for preparing complementary foods. Rotten groundnuts were removed before mixing with maize for milling into flour. Caregivers explained that they mixed raw soybeans with maize without subjecting the soy to any treatment before processing into flour. Figure 1 illustrates how the maize and legumes are handled when processing flour for complementary feeding.

3.5. Storage of Flour for Complementary Feeding

Mothers and caregivers indicated that the processed flour (whole grain) is stored for a maximum period of seven days while the white flour is stored for longer than seven days. It was learnt that keeping the whole grain flour for over seven days resulted in the flour changing its

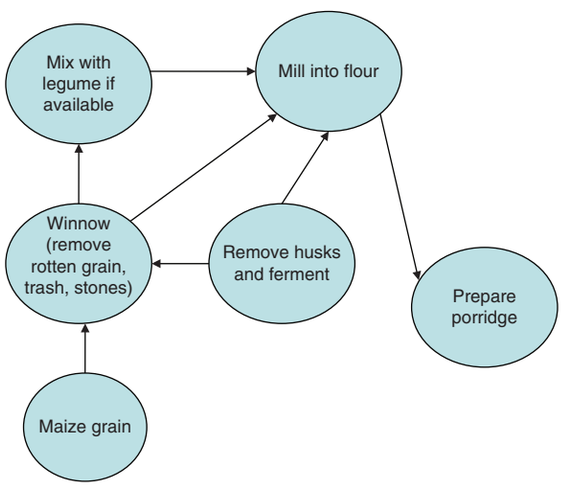

Fig. 1. Steps in processing maize into flour for preparing complementary food.

taste and flavour. The taste changed to bitterness and the flavour of the porridge differed from the normal porridge flavour. Participants further explained that where legumes are added to maize, the flour is used for a shorter period of time because normally small quantities are processed at a time and therefore do not last long. Different utensils such as plastic pails with lids, woven baskets and polyethylene bags are used for storing the flour. Mothers and caregivers reported that flour stored in plastic pails changed flavour and taste faster than that stored in woven baskets and polyethylene bags. The study found that households do not take any measures to control temperature of the environment where the flour is stored.

3.5.1. Sanitation and Hygienic Practices Around Households

It was observed that most household surroundings were littered with refuse and animal dung. Animals were also roaming around the homesteads without control. In some households, maize flour was dried on mats that were laid on dusty surfaces. Cooking utensils were generally cleaned soon before cooking the food and sometimes several utensils were cleaned by dipping in the same water where other utensils were cleaned before. In few households sun-dryers were used to dry cooking utensils. The results further showed that 45% of the households reported that their child had diarrhoea in the previous two days. Table II presents information on the relationship between hygiene practices by mothers and prevalence of diarrhoea among children 6–23 months.

Table II. Relationship between hygiene practices by mothers and prevalence of diarrhoea among children age 6–23 months.

Recommended practice	Does mother or caregiver do this?	Prevalence of diarrhoea				
		Yes	No	Total	χ^2	*p*-value
Cleaning cooking utensils	Yes	9	17	26	3.237	0.071
	No	9	5	14		
Washing hands before cooking	Yes	1	6	7	3.234	0.072
	No	17	16	33		
Cleaning utensils for keeping water for cooking	Yes	8	12	20	0.404	0.376
	No	10	10	20		
Covering water during storage	Yes	5	4	9	0.523	0.364
	No	13	18	31		
Using protected source of drinking water	Yes	16	17	33	0.925	0.297
	No	2	5	7		
Covering food during cooking	Yes	4	12	16	4.310	0.039*
	No	14	10	24		
Covering food after cooking	Yes	2	10	12	5.56	0.020*
	No	16	12	28		
Covering food during keeping	Yes	6	14	20	3.636	0.05*
	No	12	8	20		

Note: *Significant at 95% level of significance.

Results in Table II show that there was strong association between covering food during cooking, after cooking, during keeping and prevalence of diarrhoea ($\chi^2 = 4.31$, $p = 0.039$, $\chi^2 = 5.56$, $p = 0.020$ and $\chi^2 = 3.636$, $p = 0.05$) respectively. Prevalence of diarrhoea was lower among children whose mothers covered complementary food during handling. Though not significant, washing hands before preparing food and washing cooking utensils was also associated with low prevalence of diarrhoea among children. Food hygiene was also strongly associated with literacy of the mother or caregiver ($\chi^2 = 5.017$, $p = 0.026$). More mothers (54.2%) who could read or write compared to those who could not read or write (18.8%) washed hands and utensils before preparing complementary foods.

3.5.2. Preparation of Porridge for Complementary Feeding

Mothers and caregivers described the process of preparing porridge for complementary feeding. The process involved use of ingredients such as maize flour or maize/legume flour, salt and water. The porridge was prepared by firstly heating water in a pot until the water was warm, add a pinch of salt and add flour slowly and stir with a wooden spoon until a thin consistent mixture was obtained. The mixture was brought to boil and it was stirred continuously with the wooden spoon. More flour was added until the mixture was thick but light enough to flow. The pot was covered and heat was reduced and the porridge was simmered until the flour was gelatinized. The pot was removed from the heat source and the porridge was let to cool. The porridge was then served to the child to eat. The majority of mothers indicated that they did not know how to prepare nutritious complementary food for the children. One mother commented that: "*Ngati mungapeze nthawi mudzabwere kudzatiphunzitsa kuphika chakudya cha wana chopatsa thanzi*." ("*If you have time, you should come to teach us how to prepare nutritious complementary food*"). Observations further showed that some mothers served complementary food that was not fully cooked. This was mainly because of using too much flour in small amount of water which thickened before gelatinization of the flour.

3.5.3. Child Feeding Techniques by Mothers

During the FGDs participants explained that a mother or caregiver ensures that the porridge is not too hot for the child to eat. To ensure this, some mothers put food on a spoon and put the spoon and the food into their own mouths to feel how hot the food is. The food is then given to the child when the mother is certain that the food is cool enough. This process is repeated until the child is given adequate food. When a child is not willing to eat or is difficult to feed, mothers and caregivers employ different techniques to make the child eat the food. The techniques include using other siblings to encourage the child to eat. The process involves giving food to an older sibling to

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Table III. Risks associated with complementary feeding in Dedza District in Central Malawi.

Risk identified	Implication on the child	Suggested actions to be taken
Over one fifth (22.9%) of the children are not introduced to complementary feeding at the right age of six months.	The child is at risk of undernutrition due to low nutrient intakes and infections at an age earlier than six months.	Train mothers, caregivers and community cultural leaders on importance of starting giving complementary foods to children at the age of six months and promote peer-counseling on infant and young child feeding.
Lack of diversity in complementary foods given to children.	Children are at risk of suffering from micronutrient deficiencies as diets that are low in diversity tend to be low in micronutrients.	Train mothers and caregivers how to incorporate micronutrient rich foods such as fruits, green vegetables and legumes into complementary foods.
Reduced quantity of food and frequency of feeding children by mothers due to lack of time for preparing food.	Children are at risk of undernutrition due to inadequate intake of energy and nutrients. Such children will be susceptible to frequent infections.	Promote energy and time saving technologies to allow mothers to prepare adequate food and to feed their children more frequently and adequately.
Use of shriveled, discoloured and damaged groundnuts to incorporate into complementary foods to feed children.	Children are at risk of being exposed to aflatoxin and other mycotoxins which are common in shriveled and damaged groundnuts. Aflatoxin is associated with growth failure and stunting in children.	Train mothers, caregivers, community leaders on the dangers of aflatoxin and the correct quality of groundnuts to process into complementary food.
Mixing raw soybeans with maize without subjecting the soybeans to any treatment before milling into flour for preparing complementary foods.	Children are at risk of consuming anti-nutritional factors such as trypsin inhibitors which cause growth failure and undernutrition.	Train mothers, caregivers and community leaders correct methods of processing soybeans to remove antinutritional factors.
Whole maize flour changing its taste and flavour after seven days and when stored in plastic pails.	The flour is affected by lipolysis activities that lead to rancidity of fats due to oxidation process.	Train mothers and caregivers on recommended storage conditions for whole maize flour. Promote use of appropriate storage materials.
Poor sanitation around homesteads, littered with refuse and animal dung.	Risk of infections and food contamination with coliforms from animal wastes.	Water, sanitation and hygiene interventions should be included in infant and young child feeding practices.
Mothers and caregivers have limited knowledge of preparing nutritious complementary foods.	Low energy and nutrient dense food may be fed to children which may lead to undernutrition.	Train mothers and care givers on how to process and prepare energy and nutrient dense complementary foods.
Pinching the child's nose to force the child to swallow food as it gasps for air.	Children do not eat enough food as they are overwhelmed by the pinching of the nose, children may chock with food and make eating an unpleasant experience.	Train mothers and caregivers on recommended practices for active or responsive feeding of children.

eat while the young one is watching. When the younger child sees the older one eating, it emulates the eating and by doing so, the food is eaten. Mothers also persuade the child by rewarding it with other favourable foods so that by seeing the favourable foods the child would eat the food quickly so that it should get the other food. Diluting the food and feeding the child with the mother's hands while the child sits on the mother's lap is another technique used. The contact between the child and the mother encourages the child to eat. Feeding the child while on the breast also keeps the child calm. In extreme cases, some mothers indicated that they force the child to eat by holding the child tightly and pinching the child's nose to force the child to swallow the food as it gasps for air. In the case where a child refuses to eat, mothers reported that the food is kept in covered containers until the time when the child is willing to eat. The food is reheated and fed to the child within a period of less than five hours to prevent deterioration. Table III presents information on the factors or risks that were identified, their implications and suggested actions that may be taken to avert the risks.

4. DISCUSSION

Results of this study have shown that complementary foods given to infants and young children in Mayani EPA in Dedza district lack diversity. This might be attributed to lack of diversification of food production or procurement at household level. Dietary diversity refers to the increase in the variety of foods across and within food groups capable of ensuring adequate intake of nutrients that can promote good health.[9] This is because not one single food group can supply all the nutrients needed for good health. Studies have shown that the more food groups one includes in a daily diet, the more likely the diet will meet nutrient requirements.[10, 11] Complementary foods that are not diversified therefore expose children to the risks of micronutrient deficiencies and undernutrition. This study therefore suggests that young children in Dedza district are

at risk of micronutrient deficiencies. Adding foods from meat and meat products, vegetables and legumes to maize porridge may assist to increase the nutrient density of the complementary foods.

To improve the nutritive value of the maize porridge, some mothers added raw soybeans to maize and milled it into flour. However, soybeans contain trypsin inhibitors, chymotrypsin inhibitors and phytic acid which are anti-nutritional factors which may lead to low nutrient intake and growth failure in children. The recommended practice is that soybeans should be roasted or boiled and de-hulled to destroy trypsin and chymotrypsin inhibitors and to remove phytic acid before processing into flour for preparing complementary foods.[12] We also found that other mothers incorporated discoloured, shriveled and damaged groundnuts to maize before milling into flour. Such types of groundnuts are likely to be contaminated with aflatoxin and may expose the children to the risks of aflatoxicosis.[13] Exposure to aflatoxin is associated with growth failure and stunting in children.[14] Mothers therefore demonstrated limited knowledge in food processing and preparation of complementary foods.

During the FGDs, mothers explained that due to time constraints they reduced the quantity and frequency of feeding their children. Such practice would put the children at risk of undernutrition due to inadequate dietary intake which is one of the immediate causes of malnutrition. Children are supposed to be fed frequently due to their low capacity to eat more food at a time. Mothers and caregivers had also some problems with storage of flour to maintain flavour and taste. Whole maize flour stored in plastic pails was reported to change flavour and taste after seven days. These changes may be attributed to rancidity of the flour due to lipolytic activities that occur due to increased moisture content. This may also explain why flour stored in plastic pails deteriorated faster than that stored in woven baskets and polyethylene sacks.

An increase in the number of children given birth to may assist the mother to gain experience in child care and feeding practices. However, increased number of children in a household overstretches household resources and reduces time for care and feeding of the youngest children. We found that the majority of mothers and caregivers in the study area know the recommended complementary feeding practices especially when to introduce complementary foods and what to give to their children. However, most mothers do not practice what they know. Sometimes mothers spend most of the time away from home and working in the fields or selling merchandise in markets. In such cases, mothers and caregivers do not have enough time to prepare food and feed their children as recommended. In some cases children are left to be cared for by their siblings at home while mothers go to carry out some economic activities away from home. The siblings may not prepare nutritious complementary foods due to lack of skills and knowledge. Prolonged exposure to low nutrient complementary foods may result in undernutrition. It is therefore important for service providers to train communities to ably process and prepare complementary food and to feed the children correctly.

The main sources of information on child feeding accessible by mothers and caregivers include health facilities, mothers and friends. The influence of friends and mothers on child feeding practices has been reported in other studies.[15–17] We also found that cultural values affect child feeding practices in the study area. Women strongly believe that men are not supposed to feed children. In this case, it is important to sensitize women and men to take part in child feeding practices. Since men are decision makers in their households, their involvement in child feeding may assist households to allocate more financial resources towards provision of food and child care support.

The study has also shown that sanitation and hygiene practices are poor and need to be improved in the research area. Unregulated movement of livestock in homesteads may be a source of contamination of food with coliforms from animal droppings which may lead to diarrheal infections which may result in undernutrition among infants and young children. This may also explain why prevalence of diarrhoea among young children is high in the study area. Promotion of hand washing practices, covering of food and control of domestic animals may contribute to reduction of prevalence of diarrhoea in the study area.

5. CONCLUSION

Complementary feeding practices among mothers and caregivers in Dedza district are not appropriate. Lack of food diversity, low quantity of complementary foods, low feeding frequency and poor sanitation and hygiene practices are contributing factors to inappropriate feeding practices and poor nutrition among the children. Therefore, training and counseling mothers and caregivers on food processing, preparation and appropriate child feeding practices are recommended.

LIST OF ABBREVIATIONS

FGD: Focus Group Discussion.

Conflict of Interests

There is no conflict of interest.

Acknowledgments: The authors are grateful to staff from Ministry of Agriculture at Mayani EPA in Dedza District, mothers of children who participated in the study and Lilongwe University of Agriculture and Natural Resources for funding the study through the Capacity Building for the Management of Climate Change (CABMACC) project.

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Received: 13 February 2017. Accepted: 16 March 2017.

RESEARCH ARTICLE