

A study to assess the knowledge and practice towards complimentary feeding among the selected mothers from a rural community

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INTRODUCTION

According to WHO, UNICEF and BPNI, exclusive breastfeeding is compulsory for an infant upto the age of six months and then initiation of complementary feeding is a must. An old popular word 'weaning' is replaced by 'Complementary feeding'. Weaning literally mean 'to accustom to' or 'to free from a habit'. Complementary feeding complements to breast-feeding criteria for selection of food, applications of principles of nutrition, hygiene and infant psychology while preparing, feeding and monitoring the infant. This process is influenced by several factors like availability, socio economic and educational status of parents, family beliefs, customs and attitudes, hygienic practices, use of available health services and marketing of market preparation .

BACKGROUND OF STUDY

An appropriate diet is critical in the growth and development of children especially in the first two years of life.¹ The World Health Organization (WHO) recommends exclusive breast feeding for the first six months of life, with the addition of complementary feeds at six months with continued breast feeds until at least the age of two.^{2,3} Infants and young children are at an increased risk of malnutrition from six months of age onwards, when breast milk alone is no longer sufficient to meet all their nutritional requirements and complementary feeding should be started. Initiating complementary feeds too early or too late can lead to malnutrition.¹ The early introduction of complementary feeds before the age of six months can lead to displacement of breast milk and increased risk of infections such as diarrhea, which further contributes to weight loss and malnutrition.⁴ Besides this, it is thought that babies are also not physiologically ready to receive complementary feeds under six months due to immaturity of the gastrointestinal and neuro-developmental systems and the kidneys. Studies have demonstrated that early introduction of complementary feeds does not result in improved growth velocities or food acceptance. Complementary feeding, if not done properly, can be followed by diarrhea and months of growth retardation leading to kwashiorkor, marasmus and immunodeficiency marked by recurrent and persistent infections which may be fatal.

NEED FOR THE STUDY

Inadequate food/nutrient intake is the major factor for malnutrition. Poor nutrition leads to under weight infants and stunting. Proper breast feeding and complementary feeding practices can prevent under five mortality by 19%. Appropriate complementary feeding depends on accurate information and skilled support from the family, community and healthcare system. Inadequate knowledge about appropriate food and feeding practices is often a greater determinant of malnutrition than the lack of food. Knowledge of mothers about these factors will be of help in planning interventions to improve feeding practices. It has been shown in many studies that mothers in India are unable to start complementary feeding at the right time. As there is a paucity of literature on the complementary feeding practices in this region, the present study was undertaken to find out the practices of complementary feeding among the children aged six months to two years. The prevalence of malnutrition in low- and middle-income countries (LMICs) is considerably high. Malnutrition leads to susceptibility to preventable infectious diseases and has an indirect association with the leading causes of death in children. According to an estimate, 19.4% of children less than five years of age in our countries were underweight (weight-for-age [WAZ] Z score <-2) and about 29.9% were stunted in the year 2011 (height-for-age [HAZ] Z score <-2). Malnutrition is preventable through effective complementary feeding practices. Several strategies have been employed to improve complementary feeding practices. These include nutritional education to

mothers designed to promote healthy feeding practices; provision of complementary food offering extra energy (with or without micronutrient fortification); and increasing energy density of complementary foods through simple technology. In this review, we have done a survey to assess the knowledge and practice on complimentary feeding among the mothers in a rural population.

STATEMENT OF PROBLEM

A study to assess the knowledge and practice towards complimentary feeding among the selected mothers from a rural community

AIM

Assess the knowledge of complimentary feeding among the mothers of selected rural community.

OBJECTIVES

The objectives of the study were to:

1. Assess existing knowledge on complementary feeding among the mothers of infants
2. Assess the practice towards complimentary feeding among the selected mothers from a rural community.

ASSUMPTIONS

It is assumed that mothers from rural area lack knowledge regarding complimentary feeding and does not practice the right technique of complimentary feeding.

INCLUSION CRITERIA

1. Mothers with the age of child less than 3 years
2. Mothers from rural area

EXCLUSION CRITERIA

1. Mothers with the age of child more than 3 years
2. Mothers from urban area

REVIEW OF LITERATURE

1. In a study of complementary feeding: clinically relevant factors affecting timing and composition in Am J Clin Nutr February 2007; 85 (2) by Nancy F Krebs and K Michael Hambidge, it was found that exclusive breastfeeding for the first 6 months of life followed by optimal complementary feeding are critical for reducing and preventing morbidity and mortality in young children. Clinical factors, such as birth weight, prematurity, and illness, affect the iron and zinc requirements of younger infants. Maternal diet and nutritional status do not have a strong effect on the mineral content of human milk, but physiologic changes in milk and the infants' status determine the dependence of the infant on complementary foods in addition to human milk to meet iron and zinc requirements after 6 months. Foods with a higher zinc content, such as meats, are much more likely to be sufficient to meet dietary requirements. The strong rationale for the potential benefits of providing meat as an early complementary food, and the examples of successful intervention programs, provide potent incentives to pursue broader implementation programs, with concurrent rigorous evaluation of both efficacy and effectiveness.

2. A study on the Effects of Different Complementary Feeding Regimens on Iron Status and Enteric Microbiota in Breastfed Infants by Krebs, Nancy F et al, to compare iron status in breastfed infants randomized to groups receiving complementary feeding regimens that provided iron from fortified infant cereals or meats, and to examine the development of the enteric microbiota in these groups showed that out of forty-five exclusively breastfed 5-month-old infants who were randomized to 1 of 3 feeding groups (FGs)—commercially available pureed meats, iron- and zinc-fortified infant cereals, or iron-only fortified infant cereals—as the first and primary complementary food through 9-10 months of age. Dietary iron was determined by monthly 3-day diet records. Iron status was assessed at the end of the study by measurements of hemoglobin, serum ferritin, and soluble transferrin receptor levels. In a subsample of 14 infants, enteric microbiota were profiled in monthly stool samples (5-9 months) by 16S ribosomal RNA gene pyrosequencing. Infants in the 2 cereal FGs had 2- to 3-fold greater daily iron intakes versus the meat FG ($P < .0001$). A high percentage of healthy infants who were breastfed-only were iron-deficient, and complementary feeding, including iron exposure, influenced the development of the enteric microbiota. If these findings are confirmed, then reconsideration of strategies to both meet infants' iron requirements and optimize the developing microbiome may be warranted.

3. Fein SB et al in their study - Selected Complementary Feeding Practices and Their Association With Maternal Education in the Official Journal of the American Academy of Paediatrics studied, infants transition from a milk-based diet to one that includes most food groups, the timing of the transition, how infants are fed, and the quality of their diet can have important health implications. Sample sizes varied for relevant questions from ~1600 to ~2400. We analyzed the prevalence of 14 feeding practices and their association with the mothers' education and also examined participants' use of commercial baby foods. Approximately 21% of the mothers introduced solid foods before 4 months; 7% introduced solids after 6 months. Twenty-nine percent of the mothers introduced >3 new foods per week to infants aged 5 to 10 months. Approximately 20% of the mothers fed juice before 6 months, fed cow's milk before 12 months, and fed infants <5 times per day after 5 months. Fourteen percent of the mothers chewed food for their infant. Approximately 15% of the mothers fed <1 serving daily of either a fruit or vegetable to infants aged ≥ 9 months, half added salt to their infant's food, and more than one third who added salt used non-iodized salt. Approximately 20% fed reduced-fat cow's milk at 1 year. Almost half of the 10-month-old infants had eaten restaurant food in a restaurant in the previous week, 22% had eaten carry-out food, and 28% had eaten either type of restaurant food ≥ 2 times. The prevalence of 8 of the 14 un-healthy infant feeding practices, examined was inversely associated with maternal education. Nutrition and feeding guidance should be especially targeted to mothers with a high school education or less.

RESEARCH METHODOLOGY

Methodology of research indicates the general pattern for organizing the procedure to gather & valid & reliable data for the problem under investigation. The chapter deals with methodology adopted for the study. This chapter will encompass the research approach, design of the study, sampling technique, selection of tools, data collection procedure & plan for data analysis.

The objective of the study was to assess the knowledge & practice towards complimentary feeding among the selected mothers from a rural community.

Research Approach:

Survey method was used for the study.

Research design:

The research method used for this study is a cross-sectional survey method.

Setting of the study

The setting for the study was rural population belonging to the Phursungi village. The population consisted of the all mothers of infants and toddlers.

Population:

Population of the study consists of selected women having children less than 3 years.

Sample and sampling technique;

100 samples of women having children less than 3 years were selected from the rural community. For the present study convenient sampling technique was adopted which is convenient to the researcher in terms of affordability, accessibility, approachability and time.

Data Collection Technique

The semi structured and closed ended format of the questionnaire was adopted with a few in the open ended format. Although one of cognizant of the limitation of the structured questionnaire, it does allow greater uniformity in the manner in which questions can be presented and the answers compared.

Description of semi structured questionnaire

Section I consisted of 8 questions related to socio demographic data and the questions were pertaining to age, gender, birth order, type of family, mothers educational status, occupation, family income and source of information.

Section II consisted of 9 questions to assess the knowledge of mothers towards complimentary feeding.

Section III consisted of 12 questions to assess the practice of mothers towards complimentary feeding and each item was scored 0,1 and 2 and thus a total score of 36 .

Validity of research tool:

Validated semi structured questionnaire was used for the study

Pilot study

The pilot study was conducted on 18 Dec 2014 to assess the feasibility of the study, pretest the tools and to decide on a plan for a statistical analysis. Ten mothers were randomly selected from the community. A semi-structured interview questionnaire was administered to all the subjects to see any problems in the design their comprehension of questions and time taken to administer the questionnaire. The pilot study did not show any major flaw in the design of the questionnaire developed by the researcher. The subjects included in the pilot study were excluded in the final study.

Procedure for final data collection

The final data was collected during morning hours when the mothers were at home, and they were not busy. The investigators themselves interviewed the mothers at homes as they felt more comfortable and relaxed. All subjects willingly participated in the study. The subjects were assured about anonymity and confidentiality. The

average time taken for each subject to answer the questions was 20 minutes. The data was collected during the period between 19th -23rd December.

Plan of data analysis

Mother’s responses for the items were to be scored and analyzed in terms of numbers and percentages.

ANALYSIS, INTERPRETATION & DISCUSSION

Figure 1. Child’s age in months

0- 6months	13
6- 9months	20
10-12months	16
13-18months	30
19-24months	21

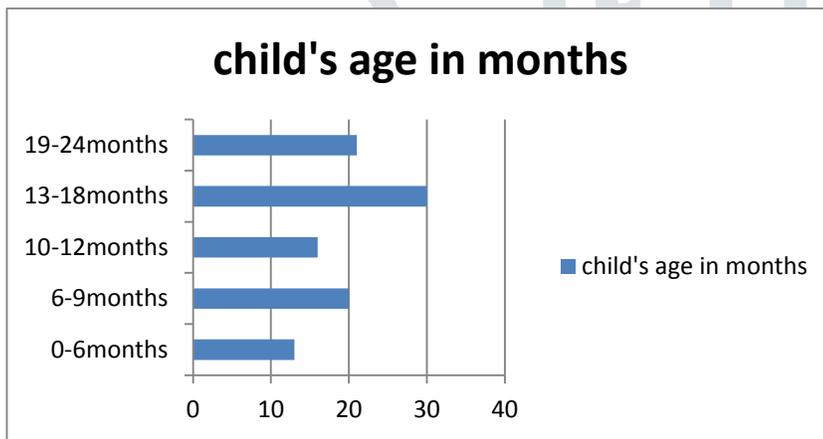


Fig 1. The maximum number of mothers were with children of age 13-18 months (30%) and the minimum were with children of age 0-6 months (13%).

Figure 2. Gender of the child

Male	49
Female	51

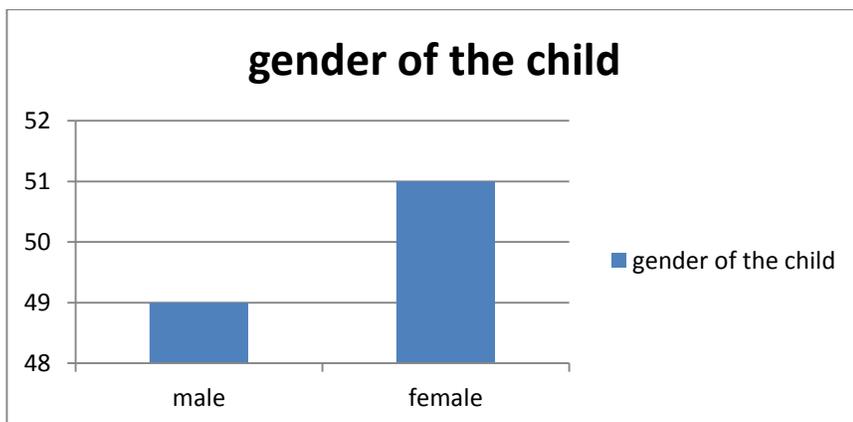


Fig 2. The sample comprised of mothers of girl child (51%) and boy child(49%).

Figure 3. Birth order of child

Birth Order of child	Percentage
First	59%
Second	36%
Third	5%

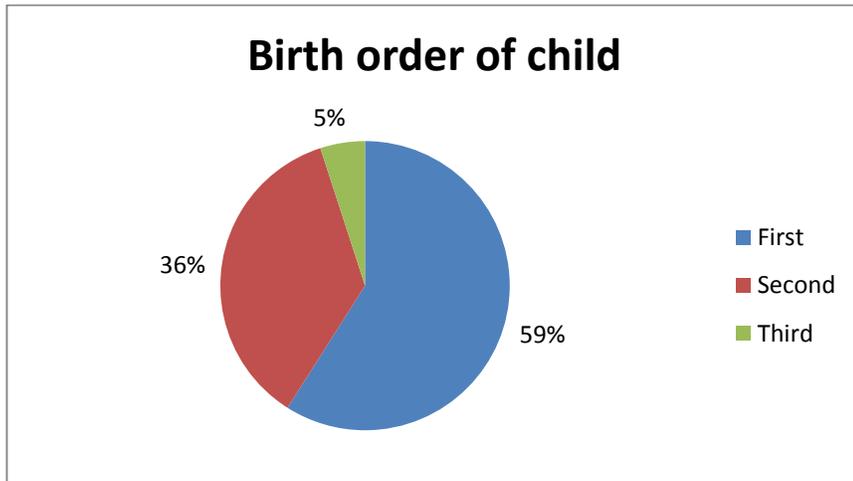


Figure 3: The maximum sample belonged to mothers with first order birth child (59%) and the minimum from mothers with third order birth child (5%).

Figure 4. Type of family

Type	%
Joint	47%
Nuclear	53%

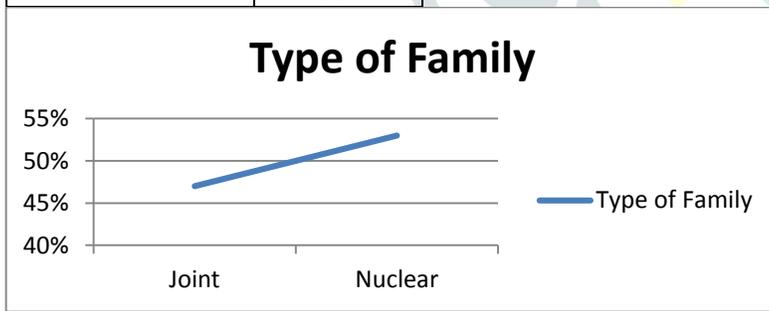


Figure 4: The sample from nuclear family (53%) was more than those from joint family(47%).

Figure 5: Mothers education

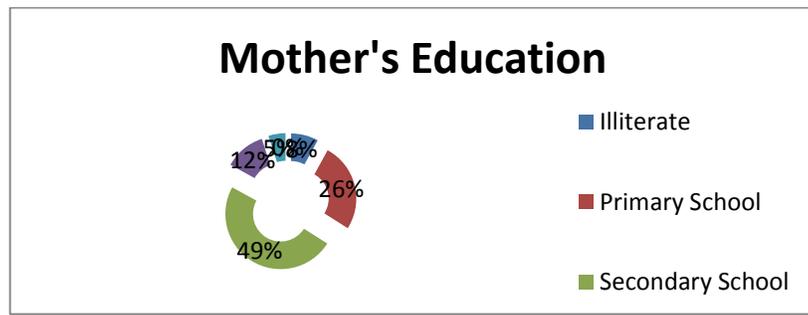


Figure 5: The maximum mothers were educated upto secondary school (49%). The rest of the sample comprised of mothers educated upto primary school (26%), senior secondary school(12%), Graduates(8%) and 5% of the sample were illiterate.

Figure 6: Mothers occupation



Figure 6: The majority of the mother were unemployed (92%) and only 8% were working.

Figure 7: Monthly income

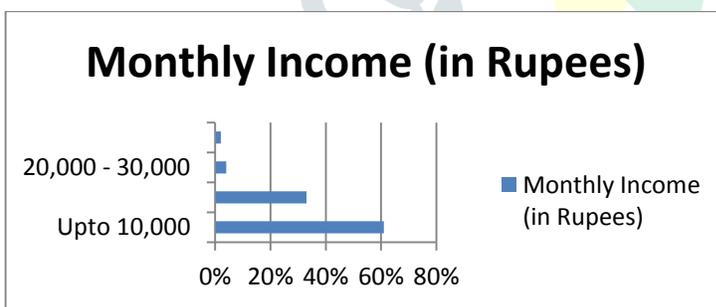


Figure 7: The sample consisted of majority (61%) falling in the income group earning less than Rs 10,000 and 2% earning more than 30,000.

Figure 8: Source of Information

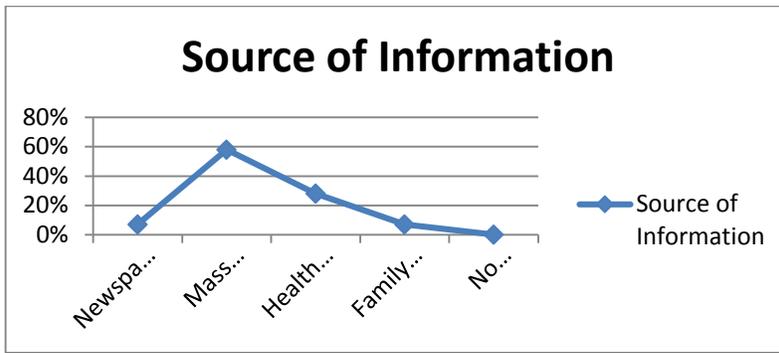


Figure 8: The source of information for the majority of the sample regarding knowledge of complimentary feeding was from mass media (58%) and health professional (28%). About 14% got their knowledge from news papers and family members.

Figure 9: Exclusive Breast Feed

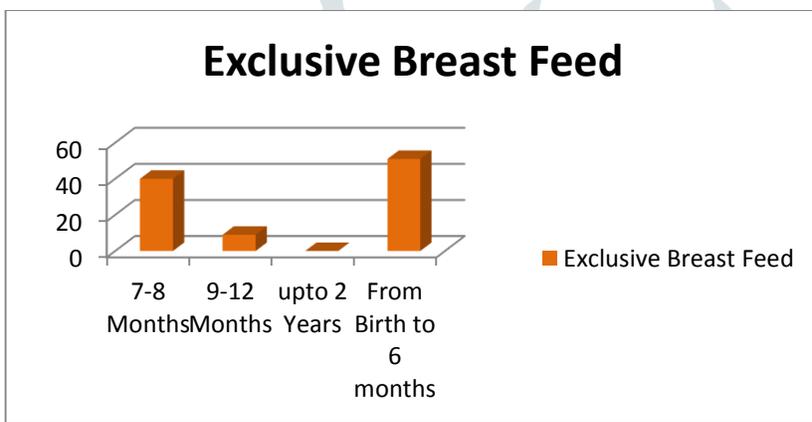


Figure 9: The majority of mothers exclusively breast fed their children upto 6 months (50%) and none above 2 years of age.

Figure 10: Ideal age to initiate Complimentary feeding

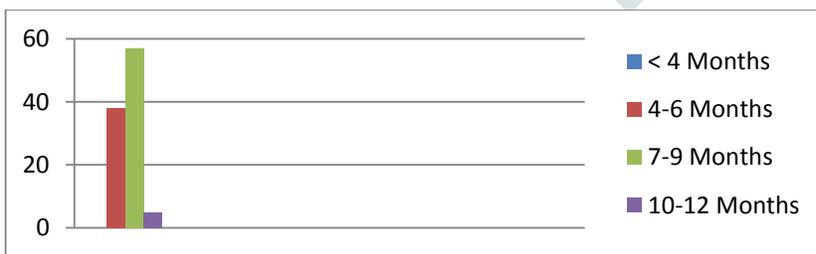


Figure 10: The majority of the mothers said that complimentary feeding should be initiated at 7-9 months (57%), 38% felt that it should be initiated at 4-6 months of age and 5% felt that it should be initiated at 10-12 months of age.

Figure 11: Combination of Foods to be given

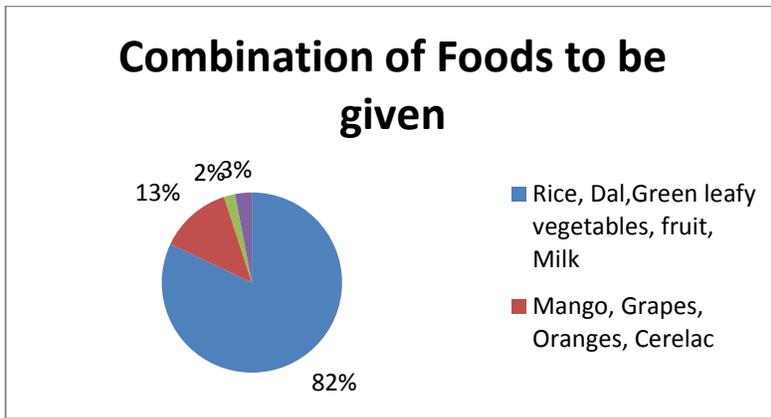


Figure 11: The majority of mothers started their complimentary feeding with rice, dal, green leafy vegetables, fruit along with breast milk (82%), mango, grapes, oranges and cerelac (13%), curd, cheese, milk, ghee (3%) and liquid diet like fruit juices, animal milk (2%).

Figure 12: Method of Feeding

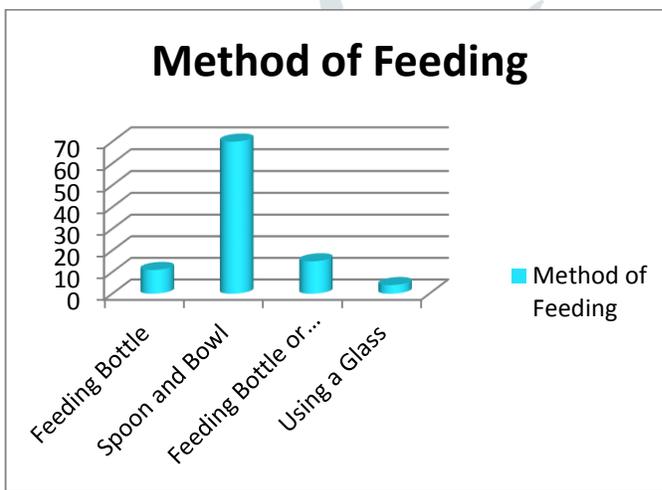


Figure 12: The 70% of mothers used spoon and bowl while giving complimentary feeds, 15% of mothers used either feeding bottle or spoon and bowl, 11% using feeding bottle exclusively and 4% feeding with the help of glass.

Figure 13: Ideal position for feeding

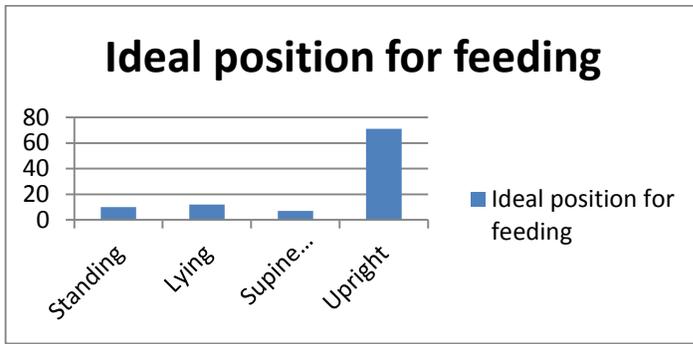


Figure 13: The majority of mothers knew that feeding the child in an upright position(71%) is the ideal position for feeding ; 12% fed in a lying position, 10% standing and 7 % in supine or lying in 45 degree inclination

Figure 14: Change of food



Figure 14: The 30% mothers changed or introduced another type of food every week and only 21 % changed the complimentary feed every day.

Figure 15: Complimentary Feeding practices during diarrhoea

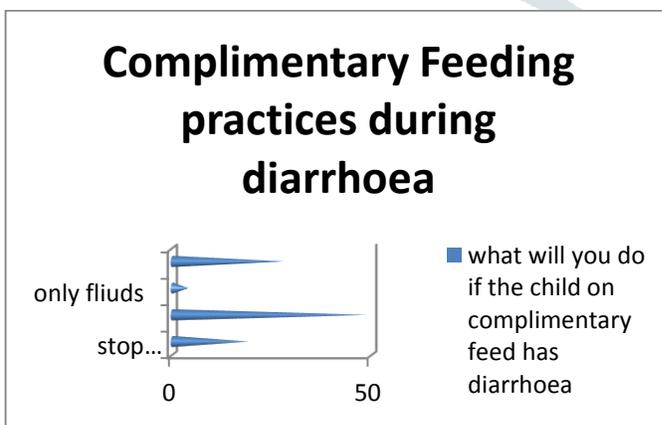


Figure 15: The mothers who continued with their complimentary feeding even during diarrhoea was 49% and only 4% gave fluids as complimentary feeds during diarrhoea.

Figure 16: Method of Cleaning vessels used for cooking and feeding the baby

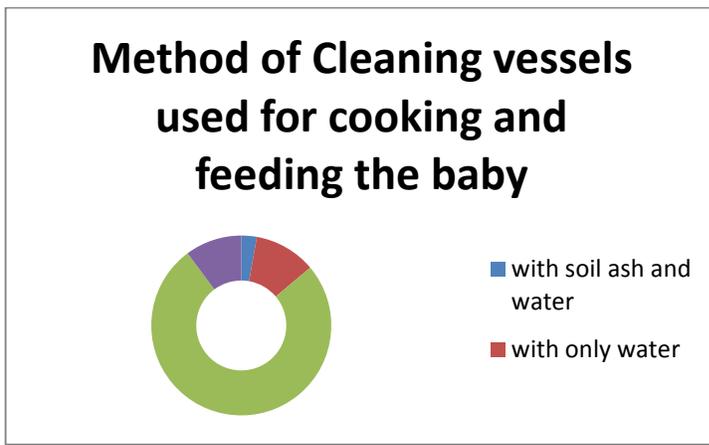


Figure 16: The mothers who cleaned the vessels used for complimentary feeding with soap and water comprised of 82% and with soil and water 3%.

Figure25. Continuing complementary feeding in Sickness

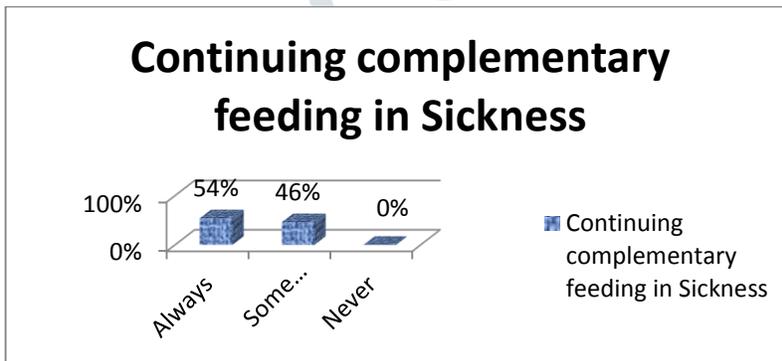


Figure 25: 54 % of the mothers always continued feeding complementary feeds to the children during sickness. 46% of the mothers continued complementary feeds sometimes in sickness and there were no mothers who stopped complementary feeds during illness.

Figure26: Texture of Complimentary Feed

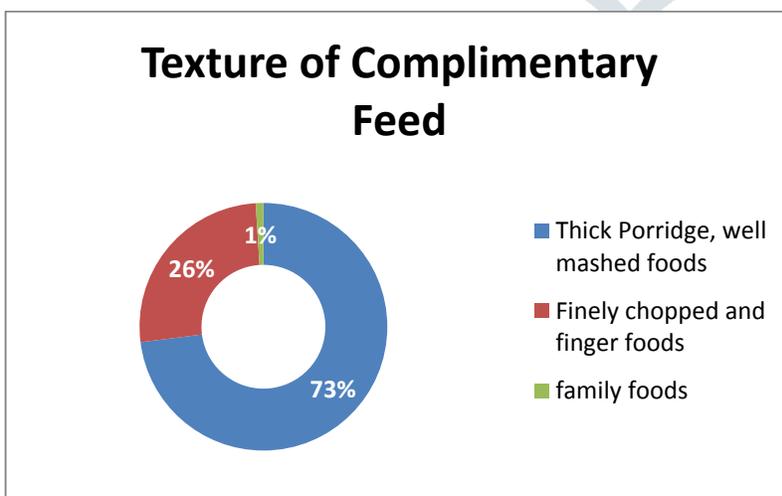


Figure 26 : 73% of the complementary feeds were Thick Porridge well mashed foods, 26 % gave finely chopped and finger foods, 1% gave family foods as complementary feeds.

Recommendations

1. A close analysis of the study showed that the majority of the problems related to complimentary feeding were related to lack of knowledge and initiative from the mother /caregivers . One of the major areas that require attention is the knowledge of the mothers related to complimentary feeding . What is needed more is imparting knowledge to antenatal mothers , and immediate family members regarding complimentary feeding.
2. Emphasis should be given on imparting health education to mothers and families during their antenatal visits.
3. Health Education can be provided to mothers and family members during home visits conducted by primary health care workers, like ANMs , Anganwadi workers, Village Health Guide.
4. Incidental health teaching may be given by health care workers during immunization programme, etc.
5. More IEC materials may be provided to mothers and families.
6. A wide gap between all health care professionals in terms of health education being provided to the mothers. (Some health care professionals recommend breast feeding upto 4 months & some till 6 months .)
7. Nutritional exhibition on complimentary feedings may be conducted regularly at PHC
8. A similar study may be replicated on a large sample , thereby findings can be generalized for a large population.
 9. The government , health policy makers may be appealed for preparation of a standardized education programme.

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