Etiical Review Committee, ICDDR,B.

Principal Investigator: DR. SHAHEEM AHMED

Application No: 85-032

Title of Study: Breast Feeding, Weaning & Infant Growth in Rural Bangladesh

Trainee Investigator (if any)________________________

Supporting Agency (if Non-ICDDR,B)________________

Project Status: 
1. Continuation with change
2. New Study
3. No change (Do not fill out rest of form)

Source of Population:

- Ill subjects (Yes No)
- Non-ill subjects (Yes No)
- Minors or persons under guardianship (Yes No)

The study involve:

- Physical risks to the subjects (Yes No)
- Social Risks (Yes No)
- Psychological risks to subjects (Yes No)
- Discomfort to subjects (Yes No)
- Invasion of privacy (Yes No)
- Disclosure of information damaging to subject or others (Yes No)

Use of records, (hospital, medical, death, birth or other) (Yes No)
Use of fetal tissue or abortus (Yes No)
Use of organs or body fluids (Yes No)

Subjects clearly informed about:

- Nature and purposes of study (Yes No)
- Procedures to be followed including alternatives used (Yes No)
- Physical risks (Yes No)
- Sensitive questions (Yes No)
- Benefits to be derived (Yes No)
- Right to refuse to participate or to withdraw from study (Yes No)
- Confidential handling of data (Yes No)

Compensation &/or treatment where there are risks or privacy is involved in any particular procedure (Yes No)

5. Will signed consent form be required:
   - From subjects (Yes No)
   - From parent or guardian (if subjects are minors) (Yes No)

6. Will precautions be taken to protect anonymity of subjects (Yes No)

7. Check documents being submitted herewith to Committee:
   - Umbrella proposal - Initially submit an overview (all other requirements will be submitted with individual studies)
   - Protocol (Required)
   - Abstract Summary (Required)
   - Statement given or read to subjects on nature of study, risks, types of questions to be asked, and right to refuse to participate or withdraw (Required)
   - Informed consent form for subjects
   - Informed consent form for parent or guardian
   - Procedure for maintaining confidentiality
   - Questionnaire or interview schedule

If the final instrument is not completed prior to review, the following information should be included in the abstract summary:

1. Description of areas to be covered in the questionnaire or interview which could be considered either sensitive or which would constitute an invasion of privacy.
2. Examples of the type of specific questions to be asked in the sensitive areas.
3. An indication as to when the questionnaire will be presented to the Cttee. for review.

To obtain approval of the Ethical Review Committee for any changes involving the rights and welfare of subjects before making such change.

Shameem Ahmed
Principal Investigator

Shameem Ahmed
Trainee
SECTION - I

1. TITLE
   : BREAST FEEDING, WEANING AND INFANT GROWTH IN RURAL BANGLADESH

2. PRINCIPAL INVESTIGATOR
   : DR. SHAMEEM AHMED

   CO-INVESTIGATOR
   : DR. ABDUL BARI

   CONSULTANT
   : DR. MGM ROWLAND

3. STARTING DATE
   : MID. OCTOBER, 1985

4. COMPLETION DATE
   : JUNE, 1987

5. TOTAL BUDGET
   : TAKA 169,268

6. SCIENTIFIC PROGRAMME
   : (THIS PROTOCOL HAS BEEN APPROVED
      BY THE NUTRITION WORKING GROUP) 17 SEP 85

   PROGRAMME HEAD
   : MGM ROWLAND

   (Signature of Programme Head)
   Date: 22.9.85

   AND THE COMMUNITY SERVICES
   RESEARCH GROUP 15. Sept 85

   PROGRAMME HEAD
   : MGM ROWLAND

   (Signature of Programme Head)
   22.9.85
7. ABSTRACT SUMMARY

Although almost all infants in rural Bangladesh are breast fed their growth tend to falter from 3-4 months onward. This could be due to too early introduction of supplementary foods leading to increased diarrhoeal illness, malnutrition and increased risk of death or due to too late introduction of weaning foods leading to undernutrition, increased diarrhoeal morbidity and increased risk of death.

This study will examine the effect of weaning at different ages on the growth and morbidity (particularly diarrhoeal illnesses) on a group of infants. The effect of maternal nutritional status on the growth of the infants will be assessed also. Attitude of mothers regarding breast feeding and weaning of infants will be recorded at the beginning of the study. Breast feeding practices will be closely observed in a few mothers and their infants.

The fat and micronutrient content of breast milk will be assessed and related to the nutritional status of the mothers and the growth of their infants.

At the end of this study we expect to identify the optimal period for introducing supplementary foods, any deficiencies in breast milk that may exist and good breast feeding practices. These findings may help in nutrition intervention programmes for mothers and children in Bangladesh.
8. Reviews

(i) Ethical Review Committee: ____________________________
   (Approved/Not Approved)

(ii) Research Review Committee: ____________________________
    (Approved/Not Approved)

(iii) Director's Signature and remarks, if any
     ____________________________
SECTION II  RESEARCH PLAN

A. INTRODUCTION

1. OBJECTIVE:
The objective of this study will be to assess the effect of the onset of weaning, morbidity and mother's nutritional status on the growth of breast fed infants. Breast feeding practices will be observed in a few mothers and infants and this will include the frequency of putting the child to the breast and the duration of each feed.

The change in fat and micronutrient content of breast milk at different times of lactation will be measured and related to the mothers' nutritional status and growth of the infants.

2. BACKGROUND
Breast feeding is the traditional and almost universal form of infant nutrition in rural Bangladesh\(^1\),\(^2\). Khan \(^1\) has found 98% of rural Bangladeshi mothers breastfeeding their infants at 1 yr. of age, while Brown et al.\(^3\) and Huffman et al.\(^4\) found the almost universal continuation of breast feeding up to 24 months of age and beyond. The World Fertility Survey has shown that Bangladesh has the longest median period (31 months) of breast feeding among all the countries studied.

Observations in many rural communities of the developing world indicate that in most cases infants thrive well on breast milk alone, for the first 4-6 months of life\(^5\). Jelliffe and Jelliffe\(^6\) and Mata and Wyatt\(^7\) have shown that breast feeding enhances survival during early months of life. In most developing
countries the average growth rate of infants is satisfactory up to 3 months of age, but then begins to fall sharply(8). Khan and Curlin(9) have shown that the growth curves of Bangladeshi children fall far behind those of developed nations from the 4th month onward. Exclusive breast feeding is capable of supporting excellent growth before 3 months of age(10). Ahn and Maclean(11) and Kawser and Talukder(12) have shown an apparent fall off in growth after 3-4 months of age in groups of otherwise successfully breast fed infants. Despite the fact that all rural Bangladeshi mothers breast feed their infants the prevalence of malnutrition in infancy is to the extent of 80%(13) and the infant mortality of 142.1000 live births, is one of the highest in the world. The reasons for this could be explained by the "Weanling's Dilemma"(14) presented schematically below:

**THE WEANLING'S DILEMMA**

![Diagram](image)
logically the timing of the introduction of additional foods to the diet of the breast fed child should be determined by the quantity and the quality and the duration of production of the mother's milk and the adequacy of the infant's growth in relation to this(14). However this is not possible in practice and the weaning period has long been recognised as a particularly hazardous phase in childhood (15). Since the standards of personal hygiene and sanitation are low in many communities of the developing countries, contamination of infant food with pathogenic microorganisms may be an important source of infectious diarrhoea (16). Black et al (17) have specifically found that in rural Bangladesh, E. coli contamination of weaning foods was significantly related to the children's annual incidence of diarrhoea.

Also in the third world communities suboptimal maternal health and nutrition may result in lower or less well sustained milk output (10). Studies by Whitehead et al (18) and Lonnerdal et al(19) on breast milk output did not show an increase in output sustained over the course of lactation. Growth may falter because of disparity between milk production by the mother and the child's needs. The child will then be malnourished, becoming predisposed to diarrhoea (3) and again diarrhoea has adverse effects on growth (20).

Due to the problems associated with the onset of weaning it has been advocated that weaning should be delayed in underprivileged communities for as long as possible (21). However, despite universal breast feeding in rural Bangladesh, Brown et al (3) have
reported that the consumption of nutrients by the infants is grossly inadequate compared with international standards. Indeed, the growth rate of the infants was already faltering compared with an international reference population before they were 6 months old. The important question then is, "how long is breast milk alone adequate for the normal physical development of the infant?"

An attempt to solve the dispute centering around the merits of early supplementation and the dangers of weaning foods was made by Watkinson (22). He showed that children receiving the highest breast milk intakes had later weaning dates, a delayed onset of diarrhoea induced weight loss and a significantly greater weight than their less privileged counterparts by the age of one year. Another important question that arises is whether mothers, particularly in the third world, introduce weaning foods inappropriately early, reducing their milk output (23), and prematurely exposing their infants to the risk of gastrointestinal infection and thereby malnutrition (24). Jelliffe and Jelliffe (25) have suggested that early supplementation with semisolids reduces the reflex prolactin secretion. In the Gambia, Howland et al. (24) have shown a general trend for growth faltering in children who were weaned before three months of age.

In Bangladesh, there is no consistent pattern for introduction of weaning foods. Khan (1), working in a rural area in Meheran, Comilla found that by age three months, 11% of the infants were given rice and wheat products in the form of liquid and semiliquid preparation. Islam (25), working in another rural area
found that supplementary foods were added between 1 and 13 months of age. Also, in rural Bangladesh the diet of weanlings is severely limited, both in quantity and quality (3).

The other question that arises is whether mothers in rural Bangladesh start to give supplementary foods because their breast milk becomes inadequate for the growth of their children.

The nutritional adequacy of breast milk can be roughly assessed by measuring the 24 hour output and chemical composition or by the recording of satisfactory growth and good health of their infants (25). However, the technical difficulties of obtaining representative samples, especially on a 24 hour basis for determining breast milk volume are great, particularly in the field (25). As fat is the major determinant of the energy value of breast milk, soluble vitamins and essential fatty acids (27), assessing fat content by a simple method would be more worth while in rural Bangladeshi mothers. We also intend to assess the zinc, iron and copper content of breast milk at different periods of lactation. Again the quality of breast milk would depend on the maternal nutritional status and the frequency and duration of suckling. This study will also assess the nutritional status of the mothers. The suckling frequency and duration of each feed will be closely observed in a few mother-infant groups.
3. RATIONALE

Almost all infants are breast fed in rural Bangladesh, but many of them do not grow well. Supplementary foods are not introduced in an infant’s diet at any particular time. In some it is started too early and in some it is too late. Again, the fall in growth could be due to poor nutritional status of the mothers leading to poor quality of milk. No longitudinal study of all these factors has so far been done in Bangladesh. Thus, it would be worthwhile to study the effect of weaning, the mothers’ nutritional status and breast milk fat and micronutrient content over the period of lactation on the growth of infants in rural Bangladesh.

4. SPECIFIC AIMS:

The specific aims of this study will be to test the following hypotheses that:

1. Too early introduction of supplementary foods is an important cause of growth faltering in infants in rural Bangladesh.
2. Growth of breast fed infants is related to their mother’s present nutritional status.
3. Growth faltering due to illnesses contributes substantially to the overall growth deficit in rural Bangladeshi infants.
4. Good breast feeding practices, that is regular sustained suckling leads to improved lactational performance, which can be detected by satisfactory growth of the infants.
5. Fat, zinc, iron and copper content of breast milk may be rate limiting factors in the growth of infants.
METHODS OF PROCEDURE:

The study will be carried out in the ICDDR,B field project area in Chandpur, which is 40 miles to the south east of Dhaka and about 12 miles to the south of Matlab. The Chandpur field area is less intensively studied than the other ICDDR,B project areas. At present a field comparison of WHO-ORS and Rice-Salt ORS is going on there in seven villages, comprising of 12000 people. The present study will also be undertaken in these villages. All these villages are approachable throughout the year and the socioeconomic and educational status of the mothers in these villages are comparable.

The study will be for one year and six months; one year for field work and six months for data processing and analysis. A total of 100 mothers and their infants born consecutively between mid October to December, 1985 will be selected for this study. The birth rate in the area is 40/1000 population and the highest births take place during October to December. Two health assistants will motivate mothers during their pregnancy to participate in this study. Multiple births and children born with congenital malformation will be excluded.

Weight, length and arm circumference of the infants will be taken as soon after birth as possible and then once every month. The weight, arm circumference and skinfold thickness of the mothers will be taken when the measurements of her child are taken for the first time, and then once every three months. The heights of the mothers will be recorded once during the study. Portable Salter spring balances with 100 gm graduation will be
used and checked frequently with known weights. The weights of the mothers will be taken on portable scales. All the measurements will be taken by two health assistants except the skinfold thickness of the mothers, which will be taken by the principal investigator. At the beginning of the study, the knowledge and attitude of each mother regarding breast feeding and weaning will be recorded.

To determine the exact time of introduction of supplementary foods, the dietary intakes of the infants will be recorded fortnightly. Weaning will be considered to have started if there is regular addition of other foods to the infant's diet documented in three successive weeks. The mother's reasons for starting supplementary foods will be noted. The type and amount and the frequency of giving these foods will be recorded by a 24 hour recall by the mother. History of illnesses, duration and treatment given will be noted. In case of diarrhoeal illness, the type of ORS given will be recorded.

Breast milk will be collected from the mothers once during the first month and then once every three months. It will be collected between 10am and 2pm, when maximum concentration of fat occurs (29). Milk will be taken at the beginning and at the end of a feed, from both breasts, so that variation in fat content during a feed can be overcome. The fat content will be estimated by the "Crematocrit" method (27), by the principal investigator. Zinc, iron and copper concentration will be determined by flame atomic absorption spectroscopy as described by Mendelson et al (30). This will be done in the St. Thomas' Hospital in London.
The suckling pattern of a group of infants (twenty), selected randomly at the beginning of the study will be observed for 12 hours on two consecutive days once every three months. The number of times the infant is put to the breast and the duration of each feed will be recorded. This will be undertaken by the two health assistants.

Each child in the study will be given a growth card in which the weights will be plotted every month.

The two health assistants, helping in the study, will be trained by the principal investigator, in taking the measurements and filling in the information sheets, at the beginning of the study.

Basic primary health care will be given to the mothers and their children during the period of study. If necessary, they will be referred to a nearby hospital. Advice about nutrition and contraception will be offered, when asked for.

**DATA ANALYSIS**

The weights of all the infants will be plotted against the 50th percentile of the NCHS standard (31) to see the overall growth pattern of the infants (Fig.1). The infants will be grouped according to the age of onset of weaning into early, mid and late weaning groups. These will be 0-3 months, 4-6 months, and after 7 months. The mean weights of these groups of infants will be then plotted against the 50th percentile of the NCHS standard to compare the difference in their growth (Fig.11). Appropriate statistical tests will be done to find out if there is any
significant difference in these 4 groups. The number and percentage of children weaned at different ages will be calculated and plotted as in fig.III. The number of children getting diarrhoeas will be related to the time of introduction of supplementary foods to their diets.

The fat content of breast milk will be related to the time of lactation (Fig IV) and maternal nutritional status (Fig V).

The effect of incidences of illnesses, maternal breast milk fat content and time of introduction of weaning foods on growth of the infants will be derived from a multiple regression analysis. Other relevant statistical tests will be done where appropriate.

D. SIGNIFICANCE:

In Bangladesh supplementary foods are not introduced in an infant's diet at any particular time. In some it is started too early and in some it is too late. The effect of introduction of supplementary foods at different ages on the growth of infants, and the fat and micronutrient content of breast milk at different stages of lactation may help in a more realistic assessment of the adequacy of breast milk as the sole source of nutrition in the early months of life. This is critical in nutrition intervention programmes for infants in Bangladesh.
E. FACILITIES REQUIRED:

Data analysis facilities at the ICDDR,B.

F. COLLABORATIVE ARRANGEMENTS.

This will be a collaborative study of the Institute of Post Graduate Medicine and Research, Dhaka, ICDDR,B and the Institute of Child Health, London.
REFERENCES


17. Black RF, Brown KH, Becker S, Alim ARMA and Merson NH. Contamination of weaning foods and transmission of enterogenic E. coli diarrhoea in children in rural Bangladesh. Transactions of the Royal Society of Tropical Medicine and Hygiene, 76:2:


Bangladeshi mothers and infants followed for one year. The *Journal of Paediatrics*, 103:996-1000


29. Deen HF (1931). *Archives of Diseases of Children*, 6, 53


e. **ABSTRACT SUMMARY** (For ethical committee)

1. This study will assess the effect of weaning, mothers' nutritional status and the breast milk fat and micronutrient content of mothers on the growth of infants. Growth will be monitored in infants from birth to one year of age. The mothers' breast milk fat and micronutrient content will be assessed also.

2. There is no risk involved.

3. Does not apply.

4. Subjects will be referred by number only.

5. Signed consent will be obtained from the authorised legal guardian or parent of each infant.

6. Fortnightly interviews with mothers of approximately 15 mins. duration.

7. Each of the infants will be given a growth card. Their growth will be monitored longitudinally over a period of one year. The mothers and their infants will receive health care throughout the study.

8. This project requires the use of birth records.
f. SECTION III: BUDGET

DETAILED BUDGET

I. Personnel services

<table>
<thead>
<tr>
<th>Position</th>
<th>% Effort</th>
<th>No. of</th>
<th>Annual</th>
<th>Project requirements</th>
<th>Take</th>
<th>Dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal Investigator</td>
<td></td>
<td>100 lyr.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Co-Investigator</td>
<td>10</td>
<td>lyr.</td>
<td>122,617</td>
<td>12,261</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Asst[s] (2)</td>
<td>100</td>
<td>lyr.</td>
<td>75,614</td>
<td>75,614</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secretary (Gil)</td>
<td>10%</td>
<td>3 months</td>
<td>46,440</td>
<td>1,161</td>
<td></td>
<td></td>
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</tbody>
</table>

**Sub-total** 89,036

II. Supplies and Materials

<table>
<thead>
<tr>
<th>Material</th>
<th>Unit cost</th>
<th>Annual requirement</th>
</tr>
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<tbody>
<tr>
<td>Paper</td>
<td>Tk. 0.50/sheet</td>
<td>2000</td>
</tr>
<tr>
<td>Ballpoint pens</td>
<td>Tk. 9.00</td>
<td>40</td>
</tr>
<tr>
<td>Clipboards</td>
<td>20.00</td>
<td>20</td>
</tr>
<tr>
<td>Files (A4)</td>
<td>7.00</td>
<td>20</td>
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<tr>
<td>Stapler</td>
<td>180.00</td>
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</table>

**Total** 2080

III. EQUIPMENT

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salter Scales</td>
<td>2</td>
<td>2400</td>
</tr>
<tr>
<td>Herpenden skinfold caliper</td>
<td>1</td>
<td>2600</td>
</tr>
<tr>
<td>Length boards</td>
<td>2</td>
<td>2400</td>
</tr>
<tr>
<td>Measuring tapes</td>
<td>2</td>
<td>480</td>
</tr>
<tr>
<td>Microhaematocrit tubes</td>
<td>1000</td>
<td>800</td>
</tr>
<tr>
<td>Microhaematocrit Reader</td>
<td>1</td>
<td>1600</td>
</tr>
<tr>
<td>Sealing material</td>
<td></td>
<td>280</td>
</tr>
<tr>
<td>Microhaematocrit centrifuge machine</td>
<td>1</td>
<td>10,000</td>
</tr>
</tbody>
</table>

**Total** 20,760
4. PATIENT HOSPITALISATION
   Not applicable

5. OUT-PATIENT CARE
   5,000

6. TRANSPORT
   Launch trip from Dhaka to Chandpur and back
   (once a week)
   50
   16,000

7. TRAVEL AND TRANSPORTATION OF PERSONS
   Rickshaw fare for health workers (Tk 20/day)
   7,300
   28,300

8. Transportation of things

10. PRINTING AND REPRODUCTION
    Unit cost
    paper printing,
    photocopying
    2,000

11. UTILITIES, RENT and COMMUNICATION
    Room rent in Chandpur
    1000/month
    12,000

    Computer costs
    13 Coding asst.(2) 1 month 55,740 4,644
    14 Data entry asst:1 15 days 23,225 (junior) 1,161
    16 Computer programmer 1 month 65,010 5,417
    15 Statistical Officer 1 month 46,440 3,870
    27,092
### B. BUDGET SUMMARY

<table>
<thead>
<tr>
<th>CATEGORIES</th>
<th>PROJECT REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Taka</td>
</tr>
<tr>
<td>1. Personal services</td>
<td>89,036</td>
</tr>
<tr>
<td>2. Supplies</td>
<td>2,080</td>
</tr>
<tr>
<td>3. Equipment</td>
<td>20,760</td>
</tr>
<tr>
<td>4. Transport</td>
<td>28,300</td>
</tr>
<tr>
<td>5. Printing and reproduction</td>
<td>2,000</td>
</tr>
<tr>
<td>6. Rent, Communication and Utilities</td>
<td>27,092</td>
</tr>
<tr>
<td>TOTAL</td>
<td>169,268</td>
</tr>
</tbody>
</table>
FIG. I. The mean weights of infants at different ages

<table>
<thead>
<tr>
<th>Age in months</th>
<th>Weight in KG.</th>
<th>50th. percentile (NCHS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7 8 9 10 11 12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FIG. II. The mean weights of the infants grouped according to the age of onset of weaning.

<table>
<thead>
<tr>
<th>Age in months</th>
<th>Weight in KG.</th>
<th>50th. percentile (NCHS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7 8 9 10 11 12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- 0-3 months
- 4-6 months
- More than 7 months
FIG III Introduction of weaning foods at the different ages

Percentage of children weaned

1 2 3 4 5 6 7 8 9 10 11 12
Age in months

FIG IV. Percentage of mothers having different fat concentrations in their breast milk at different times of lactation

Breast milk fat
in GMS/100ml.

1 2 3 4 5 6 7 8 9 10 11 12
Time of lactation in months
FIG V. Percentage of mothers having different fat concentration in their milk in relation to their nutritional status.

<table>
<thead>
<tr>
<th>Percentage of mothers</th>
<th>[ ] high fat content</th>
<th>&lt;&gt; medium fat content</th>
<th>() low fat content</th>
</tr>
</thead>
<tbody>
<tr>
<td>well nourished</td>
<td>mildly undernourished</td>
<td>moderately undernourished</td>
<td>severely undernourished</td>
</tr>
</tbody>
</table>
Nutritional Study Form
Breast feeding, weaning and infant growth in rural Bangladesh

Village: Bari: Family:

Name: Date of birth: Sex:  
male  
Female

Religion:

MOTHER

1. Age (in yrs.):

2. Can read and write  
   yes 1  
   No 2

3. Years of formal education

4. Occupation  
   Housewife 1  
   labourer 2  
   Self employed 3  
   Other 4

5. Income/month

FATHER

6. Age (in yrs.):

7. Can read and write  
   Yes 1  
   No 2

8. Yrs. of formal education

9. Occupation  
   Landless labourer  
   Share-cropper  
   Salaried worker  
   Businessman  
   Other

10. Income/month

11. Income/month of other earning members

12. Land-holding:
   
   Landless 1

   Only house and compound 2  
   House, compound and pond 3

   Exact area in bigha ____________

13. Animals and poultry
   Kind Quantity
14. Housing

No. of sheds
Roof: Thatched/tin/ pucca
Type of floor: mud/pucca
Size of living area (in feet):

15. Drinking water
   Tubewell       1
   well           2
   Pond           3
   River          4

16. Washing water
   Tubewell       1
   Well           2
   Pond           3
   River          4

17. Toilet
   Sanitary       1
   Pit            2
   Open           3

18. Number of people in the household:

19. Number of children born:

20. Number of children born:

21. CHILD SPACING

<table>
<thead>
<tr>
<th>AGE</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SEX</th>
<th>M</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

M = Miscarriage, D = dead, A = alive
Mention cause of death where applicable
**QUESTIONNAIRE FOR MOTHERS**

22. When did you put this child to the breast?

<table>
<thead>
<tr>
<th>Option</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>As soon as born</td>
<td>1</td>
</tr>
<tr>
<td>6-12 hrs. after birth</td>
<td>2</td>
</tr>
<tr>
<td>On the second day</td>
<td>3</td>
</tr>
<tr>
<td>On the third day</td>
<td>4</td>
</tr>
<tr>
<td>Later than the third day</td>
<td>5</td>
</tr>
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</table>

23. What did you give prelacteally?

<table>
<thead>
<tr>
<th>Option</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nothing</td>
<td>1</td>
</tr>
<tr>
<td>Plain water</td>
<td>2</td>
</tr>
<tr>
<td>Honey</td>
<td>3</td>
</tr>
<tr>
<td>Other milk</td>
<td>4</td>
</tr>
<tr>
<td>Honey sugar water</td>
<td>5</td>
</tr>
<tr>
<td>Honey and other milk</td>
<td>6</td>
</tr>
<tr>
<td>Other</td>
<td>7</td>
</tr>
</tbody>
</table>

24. Did you take extra food during pregnancy?

<table>
<thead>
<tr>
<th>Option</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
</tbody>
</table>

25. Are you taking extra food now?

<table>
<thead>
<tr>
<th>Option</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
</tbody>
</table>

26. Upto what age do you intend to breast feed this child? (in months)

<table>
<thead>
<tr>
<th>Age</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

27. Why do you want to stop?

<table>
<thead>
<tr>
<th>Reason</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk will be insufficient</td>
<td>1</td>
</tr>
<tr>
<td>I may be pregnant</td>
<td>2</td>
</tr>
<tr>
<td>I want to go to work</td>
<td>3</td>
</tr>
<tr>
<td>Our custom is to stop the child</td>
<td>4</td>
</tr>
<tr>
<td>If child does not grow well</td>
<td>5</td>
</tr>
<tr>
<td>Others</td>
<td>6</td>
</tr>
</tbody>
</table>

28. How old was your last child when you stopped breast feeding him/her? (in months)

<table>
<thead>
<tr>
<th>Age</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

29. Why did you stop?

<table>
<thead>
<tr>
<th>Reason</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk was not enough</td>
<td>1</td>
</tr>
<tr>
<td>Became pregnant</td>
<td>2</td>
</tr>
<tr>
<td>Went to work</td>
<td>3</td>
</tr>
<tr>
<td>Due to custom</td>
<td>4</td>
</tr>
<tr>
<td>Child was not growing well</td>
<td>5</td>
</tr>
<tr>
<td>Mother was not well</td>
<td>6</td>
</tr>
<tr>
<td>Others</td>
<td>7</td>
</tr>
</tbody>
</table>
30. How do you know whether your child is growing well or not?

31. At what age do you intend to start solid food in this child? (In months)
    OR
    Mothers may mention milestones:
    - When child can turn/can sit up/
    - Babble/ crawls when teeth erupt
    - When child can stand/ when child can walk.

32. Why do you choose that time?

- Breast milk will not be enough
- Teeth would have erupted
- I would like to go to work
- It is our custom
- Advice from mother in law/others
- To save expenses of buying milk
- Others
Nutritional study form

Breast feeding, weaning and infant growth in rural Bangladesh

Village: Bari: Family:

Name of head of household:
Name of the child:
Mother's name:
Father's name:

<table>
<thead>
<tr>
<th>SL No.</th>
<th>Date of visit</th>
<th>MOTHER</th>
<th>CHILD</th>
<th>ILLNESS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Weight MAC SFT</td>
<td>Length WT. MAC</td>
<td>Type duration</td>
</tr>
</tbody>
</table>

ILLNESS
Type of illness: duration: TR. diarrhea

FEEDING HISTORY
BF Continuing: weaning started on

what was given? How much How many times? Why was weaning food started?

BREAST MILK COLLECTION

SL NO. Date of collection NO. of sample Result

For coding
Types of illnesses
Measles = 1
Resp. infection (cough & fever) = 2
Fever = 3
Skin disease = 4

Type of diarrhoea
watery = 1
Bloody mucoid = 2
Dehydration present = 3
WEANING
What was given?

Rice gruel: 1
Flour gruel: 2
Others: 3

Why was it started?

Insufficient breast milk: 1
Illness of the mother: 2
Mother is pregnant: 3
On advice from mother-in-law: 4
Custom: 5
Don't know: 6
Other: 7