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Review of infant feeding habits research and recommendations for relevant behavior change messages for Project NIROG.

by

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WORK DONE IN RESPONSE TO SCOPE OF WORK

This report will summarize my consultations with Dr. Najma Rizvi, an anthropologist on the staff of ICDDR,B and the principal investigator of PROJECT NIROG, A Culturally Based Nutrition Education Action - Cum Research Project to Improve the Feeding of Young Children in Bangladesh. We worked together from May 30 to June 12, 1984, in Dhaka and in the four study villages of Latifpur, Gorasin, Taratia and Payla. Assistance was received from Mr. Dan Lissance, Manoff International Inc., in reviewing data needed for concept testing and for developing messages. Other people who were consulted are listed in Appendix A.

The Scope of Work called for 1) reviewing available research and highlighting the information relevant to formulating educational messages; 2) defining food and feeding practice changes that could be made at the household level to improve the nutritional status of women and young children; and 3) identifying and testing these ideas with a small sample of households where there are nutrition problems. My activities related to each item in the scope of work will be detailed below.

1. Review of Available Research

Dr. Najma Rizvi has implemented and managed an excellent anthropological study of four villages in Tangail Thana, Bangladesh. The six fieldworkers (all of whom I observed) are well trained, well supervised, and very dedicated to accurately collecting the data and to this project. All of the fieldworkers' data are checked by A. Khan, whose thoroughness assures their reliability. Dr. Rizvi visits the field frequently and discusses the ongoing project with the staff. As of June 1, 1984, a large variety of data had been collected and reviewed, but with the exception of the socio-economic-status data, nothing else has been tabulated or analyzed systematically. Therefore, the data were not in condition for me to easily highlight the information relevant to formulating educational messages. Consequently, a large amount of my time was spent in determining what data were available, discussing their analyses with Rizvi and Khan, and beginning some preliminary tallies. A list of the data collection procedures follows. The data collection forms are attached as Appendix B.

a) On-going Ethnographies are being conducted with about 40 households. Each household has now been observed for 2-3 complete days. Although no data collection form exists, Dr. Rizvi has trained the fieldworkers with a framework for observations. Each observation period (about 3 hours) yields 3-6 pages of legal pad size notes. These notes are reviewed by Dr. Rizvi, who then discusses

the observations with the fieldworker. She also categorizes the notes (i.e. infant feeding, bathing, defecation patterns). It is on these extensive notes that Dr. Rizvi discussed with me the possible intervention projects.

b) Dietary Intakes have been collected for mothers and children in about 170 households. Three rounds of data have been collected, using a dietary form for inhouse dietary assessments which was adapted from Manoff International's Indonesia work with the help of Dr. Marian Zeitlin of Tufts University. No data have been analyzed. The 1,200 questionnaires need to be coded and analyzed.

We roughly calculated the protein and caloric intake of 36 children between 5 and 24 months and the intake of their mothers. These data appear similar to those Brown and coworkers reported from the Matlab area in rural Bangladesh. Based on our rough tally, the caloric intake for children less than 12 months old ranged from 390-657 calories, with a mean of 495 calories. The protein intake ranged from 6.0-16.9 grams, with a mean of 9.7 grams. The data describing the foods that contributed these nutrients support Dr. Rizvi's observations that infants younger than 12 months receive only breast milk and perhaps some additional milk. Children 12 months and over were receiving breast milk, rice, potato, chapati, and dal. The mean caloric intake for these children only increases to 566 calories with a range of 318-748 calories. The protein intake remains about the same, at 9.9 grams.

Two possible nutrition education messages were suggested. The first is to begin introducing food in addition to breast milk and other milk sooner. Although some nutritionists argue for nutritionally balanced multimixes, in this case, where food is scarce, the introduction of any food, in any small amount could be helpful and is more realistic. The second message could be to feed the children over 12 months more food. It appears that all they are really getting are "tastes" of food.

The foods reported as eaten by the women included rice, potato dal, oil, chapati, ruti, khichuri without vegetables, sag, data, korolla, sweet potato, dharrosh, fish, chicken, alo, atar jai, and lau. The caloric intake for the 34 mothers of the 36 children mentioned above was 568-1,860, with a mean of 1,258 calories. The women's protein intake was between 11.3 and 52.4 grams, with a mean of 27.8 grams.

Khan suggested that these intakes are typical and thought we would not see large differences when the entire data set was analyzed.

c) Infant Feeding Questionnaires have been administered in

about 200 households. Two different schedules have been used throughout the last 18 months. The schedule marked I.F. #1 (Appendix B) is the form now administered when babies are born or arrive with migrating families in the study villages. The schedule marked I.F. #2 (Appendix B) is similar to the other form but was developed to be administered to mothers of older children (18-24 months) in the study to aid memory recall. None of the data had been tabulated or analyzed.

During the consultancy, we did a partial, rough tally of the foods fed to children and of their time of introduction. We focused on the foods known as nirog foods to determine if they are fed first. Those rough tallies are in Appendix C. Impressions about these data will be presented later in this report. We also evaluated, in a nonstatistical sense, the questions about feeding solids to the children. Dr. Rizvi indicated that the infant feeding schedule results support her observations from the ethnographies. Some of those observations are that women do give colostrum to newborns; that other milks are given in addition to breast milk when a mother feels that she does not have enough breast milk for her baby; that mothers feed babies when they cry or when the mothers decide it is time to feed them (therefore quiet, nonaggressive children are not fed much); that solid foods are introduced at about 12 months; that a child is ready for solid foods when it feeds itself; and that mothers consider it too much trouble to cook separately for young children.

d) Morbidity data have been collected weekly for one year on about 200 households. No tallies or analyses have been computed. We reviewed these data to get a rough idea of the number of diarrhea and dysentary bouts that the children experience, and of the treatment patterns that involve adding or subtracting foods from the diets of the children. Between zero and four diseases were reported for each child each week. A total of 14 different diseases was reported. The diseases most relevant to this project included diarrhea, dysentary, and loss of appetite/unwillingness to eat (reported as anorexia).

It appeared that breastfeeding is generally continued throughout the illness. A food such as rice will be stopped if it has only recently been introduced to the child. If rice has been part of the diet for some time, however, it does not seem to be withdrawn from his/her diet completely. In this rough review, no food seemed to emerge as anti-diarrheal in character, although potatoes do not seem to be associated as closely with diarrhea as fish, meat, and rice.

e) Anthropometry. About 150 households participate in the

bimonthly measurement of infant height, weight, and arm circumference, and of maternal arm circumference. The data have not been plotted or analyzed. Some are missing due to family visiting patterns and difficulties in obtaining cooperation. A computer program for analysis of age, sex, weight (kgs), height (cm), median height, percentiles and z-scores is available at ICDDR,B. The program uses the 50th percentile of the NCHS standards as the upper limit of the normal range and will reject any value less than 2.1 kg and 49.1 cm.

During this consultancy we learned to use the program, but did not have time to process the data.

f) The Socio Economic Survey (SES) and Village History questionnaire has been completed for 930 households. Frequencies have been computed. It is from these 930 households that the approximately 200 study households were derived. These data do not provide information that will be exceptionally helpful in message design. They do confirm that food is scarce and limited in variety. These data also support that the landless have fewer total resources available to them.

g) The Food Category Survey is a 111 food item survey requiring about 2-3 hours to complete (over 3-4 visits by the fieldworker), and categorizes foods into hot, cold, nirog, and "don't know." The survey also includes extensive remarks about these foods. About 100 survey forms have been completed as of June 1984. The homemaker is asked to describe the category of the food. These category responses are given for the whole family and not specifically for the child. Rizvi has indicated that the term "nirog" is not as familiar to these study villages as it was in other areas she studied, but she found that the concept existed. Therefore, a fieldworker would check both cold and nirog if the woman indicated that the food was cold, but then gave remarks that make a food a nirog (i.e. makes no harm; health promoting; blood producing; cleanses the blood; vitamin; food for health; it's good, or bhaloi). None of these forms has been tallied. Thus, during the consultancy, we completed rough tallies of nirog and cold foods with remarks indicating nirog characteristics. That rough tally is found in Table 1. The foods listed as nirog were tallied from 78 forms; those listed as hot by at least one third on the households were also noted.

Since this project focuses on nirog foods, I suggested that these questionnaires be completed and analyzed as a high priority before message design can be done. The impressions from the data will be discussed later, however two observations are relevant to this discussion and will be discussed here. First, biscuit, which is known to be fed to children, is not included on the form. We

added biscuit for the remaining interviews. Second, the Nirog or Hot classification may not be as strong a factor in the introduction of solid foods as hypothesized. For example, atar ruti was listed as nirog on 16% of the forms we reviewed and was listed as hot on 54% of the forms. On the infant feeding schedule it was noted that atar ruti is introduced as early as six months to at least one infant. About one third (32%) of the mothers reported introducing tastes of atar ruti to their infants before ten months of age; 60% by 12 months of age; 80% by 18 months of age.

Since little of the data had been organized, it seemed appropriate to spend time sorting out the mounds of data and suggesting an analysis plan that would give a high priority to data useful for message design. The rough plan for handling data analysis is in Appendix C. I reviewed these decisions with Rizvi and Khan together, and with Dan Lissance in solo sessions. While not wanting to add to data collections, Lissance, Rizvi, and I agreed that some data important to message writing were missing. Nineteen attitudinal questions were written and pretested in the field during this consultancy. These questions are in Appendix D on the form entitled "Message Design Questionnaire--Nutrition Education Attitudes." It was recommended that 100 questionnaires be completed by July 31, 1984, with the analysis of the data to be completed by August 15, and a summary report of that data prepared by September 1. Khan and I outlined the coding and proposed analysis procedure.

Khan and I outlined the codebook for the entire data set and discussed the important variables for message design, which are listed in Appendix C.

Anticipation of a new main frame computer was part of the reason for the delay of the analysis. I encouraged Rizvi and Khan to move forward with the relevant analysis on the IBM mini. Later, Director Greenough confirmed that even if the main frame arrived this fall, it would not be operational until the end of 1985.

2. Define Food and Feeding Practice Changes that Could Be Made at the Household Level to Improve the Nutritional Status of Women and Young Children

We spent all our energies focusing on young children, and therefore did not define practices that may be helpful to women (other than eating more).

The following practices are based on a rough review of data, my observations and the observations of Rizvi and Khan. The

observations of Rizvi and Khan are supported by their 18 months of anthropological fieldwork. The task of identifying practices that can be changed is complicated by a long standing shortage of food in these villages with little prospect for change in the immediate future.

a) There is no tradition of infant feeding before the child is 12 months old with the exception of breast milk and other milks. What solids are introduced are just a "taste" and are given to children that are aggressive or eager. This tasting begins at the earliest around 6-7 months.

b) Women often believe that they have insufficient breast milk and introduce other milks as a supplement as early as one month of age.

c) When women do introduce solid foods, they do so as single ingredient foods, not as a gruel or a porridge.

These three items led to the suggestion that it is important to create an infant feeding tradition of solid foods before one year of age while retaining the strength of the breastfeeding tradition. It seems appropriate (although not entirely satisfying to the nutritionist) to merely get more calories into the child and at a later age improve the nutritional mix of the foods.

Some practices and attitudes to consider in an attempt to alter the late introduction of solid foods are listed below:

a) Mothers fear that the early introduction of solid food will cause a variety of diseases, including:

(1) cause diarrhea, or pat kharap
(2) cause swollen belly
(3) cause a child to fall sick
(4) cause health to decrease
(5) cause dysentary, or amasha
(6) cause worms, or krime

The less frequently verbalized concerns about a child having diarrhea include that the father may get mad at the mother; the mother will have more work to do including cleaning the baby and the bed; the grandfather will be vexed with the mother; the baby will need expensive medicines.

b) There is a strong belief that when a child is ready to eat solid foods, s/he will show it by grabbing at food when it is being cooked or when others are eating it; or the child will pick up food that has been dropped on the ground and put it into his/her mouth. Mothers say that if a child is not active in getting

the food, then the stomach must not be "mature" enough to handle it.

c) Dr. Rizvi has observed that the father's role may be important in decision making about infant feeding. Although none of the collected data focus on this issue, Dr. Rizvi observed that:

(1) fathers are affectionate with their children and try to bring them food treats (i.e. biscuit, candy) from the market

(2) mothers object to introducing food on the grounds that the father or grandfather will not approve

(3) fathers brag that their infants under 18 months old are only getting breast milk and other milks

We were unable to identify an infant feeding practice, porridges, gruels or other foods that could be easily "enriched" in the way Manoff International did in the Indonesia project. I suggested that the objective of the intervention might be to educate mothers to introduce solid food to their infants before 12 months of age, using nirog foods. An alternative intervention might be enriching the diet of 12-18 month-old children by developing a local recipe. Dr. Rizvi indicated that recipes using dal, rice, pumpkin, greens, oil, and salt were being tested by Save the Children, and that she was leaning toward an intervention focusing on earlier introduction of solid foods. On that basis, we returned to the field to "test" the ideas.

The concept of using nirog foods to improve infant feeding was central to this project's proposal. We briefly reviewed the data collected to date on nirog foods to determine what foods might be feasible for the test. Table 1 shows the foods that are reported as nirog and the data on introduction of these foods to children. Note that the classification nirog does not necessarily mean the food is nirog for an infant. Several of the foods listed are also either seasonal (e.g. pat shaq) or expensive (e.g. banana, eggs).

Table 1. NIROG FOODS--Based on Partial and Rough Tallies--That Potentially Would Be Fed to Children

NIROG ,ONLY	Introduced by 0-10m	12m	18m
Reported by 66-100%			
Musuri	7%	30%	55%
Shing			x
Reported by 33-66%			
Lau Shag			
Rice	28%	69%	91%
Potato	24%	52%	69%
Dharrosh		x	
Pat Shag		x	
Reported by Less Than 33%			
Shabri Kala (banana)	53%	65%	72%
Chicken Egg	18%	29%	47%
Chira	38%	68%	77%
Taki			
Chapri	x		

NIROG & COLD WITH NIROG REMARKS	Introduced by 0-10m	12m	18m
Reported by 66-100%			
Lau Shag			
Chira	38%	68%	77%
Potato	24%	52%	69%
Taki			
Chicken Egg	18%	29%	47%
Dharrosh			
Pat Shag			
Reported by 33-66%			
Musuri	7%	30%	55%
Rice	28%	69%	91%
Chapri			
Reported by Less Than 33%			

While some of these foods also are the foods that mothers report introducing to their infants, the list is not exactly the same. Table 2 shows the foods women reported feeding their children at certain times of introduction.

Table 2. Foods Introduced to Young Children--From Partial and Rough Tallies

Food	First Report month	0-10mos. %	by 12 mos. %	by 18 mos. %
Biscuit	3	71	83	85
Banana	5	53	65	72
Chira	5	38	68	77
Atar Ruti	6	32	60	80
Rice	7	28	69	91
Potato	6	24	52	69
Egg	6	18	29	47
Dal-Musuri	8	7	30	55

3. Identify and Test Ideas with Small Sample of Households Where There Are Nutrition Problems

Rizvi reported one "test" of the idea of introducing foods earlier on page 6 of her August-September 1983 NIROG--PPOJECT PROGRESS REPORT. We observed a similar example in Latifpur. At a household where Rizvi and her staff have excellent rapport, Rizvi attempted cultural bargaining*. She encouraged a grandmother to give some hand mashed rice to a 9-month-old infant. After quite a bit of cajoling, the grandmother fed about 1/2 cup of rice to the willing child. The child appeared to be hungry and reached for more. The mother's anger, however, kept the grandmother from continuing. This trial took about one hour. I doubt that the feeding would be repeated without encouragement from outsiders or the team at this time. We were prevented from returning the next day because of heavy rainfall.

I observed no other tests. Barriers to the concept testing assignment included:

a) reluctance of Dr. Rizvi to attempt feeding trial without

* Cultural bargaining is explained in Appendix D.

some "medical backup" (such as diarrheal medicine should the child fall sick) and reluctance to lose rapport with the households.
b) because of Ramadan, little daytime cooking was being done in the village. We tried to plan visits to target homes at cooking times, however, heavy rainfall prevented this on three days. A sleeping child prevented a trial at another household.
c) food is scarce. As we visited the compounds during the day, no food or beverage was seen. Some mothers reported they would "try to feed something" if we brought the food.

It does not appear that with this team, in these villages, the concept testing as conducted by Manoff International Inc. in Indonesia is appropriate or feasible at this time. It would seem that some changes in attitudes must transpire before attempting behavior change.

The Recommendations given to Dr. Rizvi included an outline for data analysis, a plan for collecting and analyzing data needed by message writers, and a possible intervention plan. As noted already, Dr. Rizvi and her assistant, Awal Dad Khan, accepted the assistance in planning the data analysis and the recommendation to collect some attitudinal data. They plan to summarize that data and have a report to the consultant who will assist in writing and testing the messages before he or she travels to Bangladesh, which they hope will occur in late September or early October.

Dr. Rizvi and I discussed several possible interventions. We also discussed these ideas with Mr. Dan Lissance. We attempted to look at what was feasible in light of the current time table, information gathered, the seeming impossibility of replicating the Rizvi team rapport in other villages, the need to depersonalize the delivery of test messages. We also discussed, in light of the fact that it appears there will be only about 40 mothers in the 4 villages who will have infants in the target age during the intervention stage of this project, what type of intervention would be feasible.

Two interpretations appear possible. One test could be attempting to have women feed their infants solid foods sooner than 12 months of age using a nirog focused message in two villages and a non-nirog focused message (both delivered by an impersonal method). There would be no control group since the project already has 18 months of very detailed data that could be used as a baseline. The other intervention could be the test of nirog messages delivered through cultural bargaining versus nirog messages about infant feeding

delivered through impersonal media. Dr. Rizvi appears to be leaning toward the first alternative and so a plan is outlined below. She indicated that she would want to consult with Ron Israel, EDC, and Dr. D. Jelliffe, UCLA, while she is on home leave (July-August 1984) before making a decision. Dr. Rizvi would like to test a variety of concepts at one time, while continuing to collect the data described earlier in this paper. I recommen that she limit her test to one idea and modify the data collection.

The Nirog Intervention outlined below is one very quick attempt to focus on a feasible intervention plan. The plan would need further work and detailing as well as input from the experts in message design and communication.

NIROG INTERVENTION

Objective: To educate mothers to introduce solid food to their children at some time before the children reach 12 months of age.

Method: Present nutrition education messages to mothers using nirog foods.

Sample: All eligible children in the four study villages in Tangail District. This will be about 40 mothers with children 6, 7, and 8 months old at the beginning of the intervention (about November 1984). These are all the estimated available children. It is expected that there will be about 10 per village.

Treatments: Treatment 1 (village of Gorasin, Latiphur). Present nutrition education messages to eligible women in two villages. Messages are written focusing on nirog foods and the introduction of solid foods before infants are one year of age.

Treatment 2 (villages of Taritia, Payla). Present nutrition education messages to eligible women in two villages. The messages will not focus on the nirog concept and might also include use of some hot foods that are now introduced between 12 and 18 months, such as atar ruti.

Control. Use almost 24 months of data already collected in this project that describes the infant feeding practices.

Evaluation:

1) Anthropological observations for changes in infant feeding. These observations will be more focused that the current ethnographies.
2) Dietary intakes (24 hour food recalls) of sample children.
3) Changes in attitudes of mothers.
4) Morbidity data focused on diarrhea (abbreviated from current data collection).

Intervention:

Twelve different recorded messages would be carried to sample households on a tape recorder. The messages would be carried by one of the current fieldworkers to each sample household every other week (November 1984 - April 1985). The messages will focus on nirog foods for Treatment 1 and not on nirog foods in Treatment 2, but on the introduction of solid foods before the child is 12 months old. Each household would be enrolled in the intervention when the child reached 5 months of age. A poster might also be given at the outset as a reminder of nirog foods. The child would be monitored for diarrhea. Medicine will be provided to children in either group who get diarrhea.

Data Collection:

1) At the outset of intervention, administer the Nutrition Education Attitude Questionnaire. Administer at end of intervention. Analyze for differences.

2) Each week a message is delivered, the anthropological ethnographic work should be done at breastkfast or supper. The ethnographies would focus only on infant feeding. Local village women may be needed to assist the fieldworkers.

3) Morbidity focusing on diarrhea and dysentery collected weekly.

4) Anthropometrics completed monthly.

5) Dietary intake of child collected monthly.

Analysis:

1) Anthropological/Ethnographical: When do mothers receiving Nirog messages start introducing solids and what solids; same for non-Nirog message receivers; what is the difference, if any, between groups.

2) Morbidity: Are the number of incidences of diarrhea related to changes in feeding pattern; are the

children with less frequent diarrhea receiving more solid food than those with more diarrhea; any differences between treatment groups; any divergence from 1983-1984 pattern.

3) Anthropometrics: any changes in percentile from beginning to end of intervention; any differences between two treatment groups; between pattern for children the same age from 1983-1984 data.

4) Dietary: any increase in amount of calories and protein; any increases in the pattern from 1983-1984 for all children; any differences in two treatment groups.

5) Attitudes: any changes in attitudes from first measurement; any differences between groups.

These indicators could be used to determine if the interventions were successful in getting mothers to feed any appreciable amount of solid food to infants before one year of age and if nirog messages are more effective than non-nirog focused messages in accomplishing this task.

Messages: Twelve messages focusing on nirog concept; 12 messages not focusing on nirog concept.

Nirog	Non-Nirog
1. Continue reinforcement of breastfeeding.	1. Continue reinforcement of breastfeeding.
2. Introduce earlier food supplement using nirog foods, such as rice, potato.	2. Introduce earlier food supplements using nirog and non-nirog foods.
3. Reduce fear of diarrhea caused by solid food by using disease-free concept of nirog foods.	

Constraints: Listed on page 6 of this report.

FUTURE PROJECT ACTIVITIES

This project is scheduled to terminate May 1985. Careful analysis of all data collected to date could easily consume the staff time and resources allocated to this project. With the encouragement from ICDDR,B to publish papers as well as Dr. Rizvi's desire to be a productive anthropologist, it would be easy to eliminate the action/intervention part of this project. Dr. Rizvi does not indicate a desire to do so. She is eager to learn how

to do an intervention, but needs technical assistance to do it.

The data collected to date have been collected in a careful and detailed manner. The fieldworkers have been well trained and supervised. This data set, then, can be considered highly reliable and should be carefully and thoroughly analyzed and written up.

Dr. Rizvi has made a commitment to the fieldworkers to employ them through May 1985. This coupled with the new wage scale (reportedly almost doubling their salaries) allows very little flexibility in the intervention design. The budget is inadequate to maintain this staff that is currently working to its maximum; to support the increased transport costs (ICDDR,B reportedly raised mileage charges substantially from the time the project was proposed and budgeted until now). There appears to be no money for intervention items, such as posters, cassettes, tape recorders or other media. The $83,000 reported in Zeitlin's January 1983 report does not reflect the figures Dr. Rizvi shared with me. She indicated that she had received $24,000 in operating funds; less than half of that remained in June 1984. She has requested AID to shift some line items, and they have approved. She intends to ask for a budget supplement. I have suggested to Dr. Rizvi that she will have to abbreviate her ongoing data collection and use her current staff in different ways to meet the objectives of the project. It is also apparent that Dr. Rizvi is funding part of the fieldwork costs out of her personal funds.

These four pilot villages probably are not the most appropriate for the development and implementation of a nutrition education strategy. There is no infrastructure of effective health workers that could spread the message. The government health workers that do visit the village reportedly do so very infrequently and then only give family planning messages (for which they receive an incentive). Several sources indicated that these health workers already have more than enough to do and cannot take on extra messages or assignments. As Lissance has reported elsewhere, radio does not penetrate these compounds, and in particular does not reach the women.

Lissance suggested that motion pictures might be the only viable mass media method that currently could be used (save setting up a system of community nutrition fieldworkers). Additionally, the food resources are scarce and no tradition of feeding infants solid foods exists.

Although the intervention would not produce a replicable nutrition education model, the intervention outlined above could test the applicability of the nirog concept. This seems worth testing before investing the time a larger intervention would require. If the nirog concept cannot be successful in an environment where the fieldworkers have developed a great deal of trust and where mothers "will do things because Awal or one of the other workers told them to," it is not likely to be successful in a depersonalized mass media effort.

Depending on the outcome of testing the nirog concept, after May 1985 the following actions may merit consideration:

1. If nirog messages prove more effective, test in other villages, perhaps using radio or motion pictures.

2. If nirog messages prove more effective, test messages in other villages using two different approaches: introduce nirog message via cultural bargaining by fieldworker versus introducing nirog message via mass media.

3. If nirog messages are no more effective than non-nirog messages, select the best messages and test as described in number 2 above.

4. Use nirog messages to teach women to enrich food of children 12-18 months old; use one of the well established local recipes (i.e., Save the Children's mix of dal, rice, pumpkin, greens, oil and salt).

MISCELLANEOUS OBSERVATIONS

1. Chickens are plentiful. However, few children are fed eggs. Several mothers remarked to us that it is better to raise chickens from the eggs and sell them in the market than to feed them to children.

2. Families that have lost a child during infancy tend to wait longer than the norm to introduce solid foods, because the fear of diarrhea and death is even stronger.

3. Fathers are authority figures in most but not all households.

4. The father's interest in child rearing appears to be related to the strength of the husband/wife relationship. Men will "warn" their wives if they see children being fed something they think is unacceptable.

5. There are "hot" biscuits and "cold" biscuits. The "hot" biscuits are cheaper.

6. The color red is a happy color. People also wear blues and greens. There do not appear to be color distinctions for girls and boys.

7. Salt is good for stomach gas. Too much salt is not good, but small quantities of salt are nirog.

8. It is most important for children to show willingness to eat in order to be fed. Mothers see such readiness as a sign that "the stomach has opened its mouth."

9. Health practitioners are not seen as authorities in infant feeding.

10. Potato is an alternative staple to rice. Even after the rice harvest, potato has remained less expensive.

11. On the weekly market day, women in the village have the most leisure time, since there is no food in the compound to prepare. Perhaps this is a good day to bring messages.

12. Some have reported mothers believing that if a young child eats too often, it is a sign that the child is sick.

13. There appear to be few episodes of diarrhea or other diseases before the age of 6 months.

14. Houses have little furniture and almost no decoration. Posters (especially those in color) would probably be welcomed and cherished.

15. One father we talked to about potatoes asked if there were enough "vitamins" in them for children.

16. Some report that feeding bananas to young children causes worms.

17. Although not a prevalent practice, some report giving atop jau and/or tumeric and rice during diarrhea.

18. Some nirog foods are not suitable for small children. For example, the molla fish has many small bones; lau shaq has a tough texture unless made into a paste.

19. The closest food item in the general diet to a porridge is kitchuri. This food is classified as a "hot" food . It is introduced to children at about 18 months.

20. Oil is very expensive and scarce. However, there has been a tradition of putting a few drops of oil in food. Perhaps women could be encouraged to add a few drops of oil to the children's potatoes.

21. Reports of solid snacks being fed to older children have been heard. The snacks are called habijabi. When fieldworkers were asked about which foods were habijabi, they uniformly replied banana, biscuit, chira and muri.

22. Women worry when they see rice kernels in children's stools.

23. The only medium truly accessible to women is word of mouth.

24. Tickling words include: "cooling to the stomach," "health promoting," "strength giving," "blood producing," "vitamin."

25. Villagers are happy to a) have visitors, b) not have a sick child, c) get gifts, d) have a market day.

26. There appears to be little singing in villages, although some women, when alone, sing a lullabye to children.

APPENDIX A: PEOPLE CONTACTED

1. Dr. Najma Rizvi, Anthropologist, ICDDR,B

2. Mr. David Leon, Manager, Statistics Branch, ICDDR,B

3. Mr. Abdullah-Hel Mustafa, Manager of Computer Services, ICDDR,B

4. Mr. Awal Dad Khan, Research Assistant, Nirog Project, ICDDR,B

5. Dr. Ayesha Majid Molla, Associate Scientist, Nutrition, ICDDR,B

6. Dr. M. M. Rahaman, Associate Director, Nutrition, ICDDR,B

7. Ms. Liliana Ayalde, Health and Nutrition Officer, Population and Health Division, USAID/Dhaka

8. Dr. Immita Cornaz, Swiss Development Corporation (ICDDR,B Board Member)

9. Dr. Miriam Were, University of Nairobi, Kenya (ICDDR,B Board Member)

10. Dr. Leonardo Mata, University of Costa Rica (ICDDR,B Board Member)

11. Dr. William Greenough, Director, ICDDR,B

12. Mr. Alanddin Chowdhury, Demographer, Nutrition, ICDDR,B

APPENDIX B

DATA COLLECTION FORMS

1. Ethnographies
2. Dietary Intakes
3. Infant Feeding Questionnaire -- Schedule 1
4. Infant Feeding Questionnaire -- Schedule 2
5. Anthropometry
6. Socio Economic Survey
7. Food Category
8. Nutrition Education Attitudes
9. Morbidity
10. Codebook Outline

#1 Anthropology/Ethnography

No Form: Framework only

ORIGINAL

H/H NO (1 2 3)	VILLAGE (4)	CARD NO. (5 6)	FILE NO. (7 8)	CHILD'S AGE IN MONTHS (9 10)	SEX (11)	NO. OF CHILDREN (12 13)	MOTHER'S AGE IN YEARS (14 15)

INFANT FOODS	MEASURING UNIT	UNIT PER BOX	
BREAST MILK			31–36 / 25–30 / 19–24 / 13–18 / 7–12 / 0–6
BARLEY (ALL KINDS)	2 SHELLS (10 ML)	5 20 PER INCH	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
FULL CREAM CONDENSED MILK ___G TIN FOR ___ DAYS • _G/DAY	1G	10 0 PER BOX	10 10 10 10 10 10 10 10 10 10 10 10 10
SKIM CONDENSED MILK ___G. TIN FOR ___ DAYS • _G/DAY	1G	10 0 PER BOX	10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10
FULL CREAM POWDERED MILK ___G. TIN FOR ___ DAYS • _G/DAY	1G	5 0 PER BOX	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
SKIM POWDERED MILK ___G TIN FOR ___ DAYS_G/DAY	1G	5 0 PER BOX	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
FRESH MILK	10 ML, 2 SHELLS	5 1½ PER BOX	5 5 5 5 5 5 5 5 5 5 5 5

SIDDHA BHAT	1	20 PER INCH 1 PLATE PER 4 SP.	
JAI(UNPER BOILED RICE)	1	1 20 PER INCH	
ATAR JAI	1	1 20 PER INCH	
RUTI/CHAPATI	$\frac{1}{2}$ PC.	1 20 PER INCH	
PITHA	$\frac{1}{2}$ PC.	1 20 PER INCH	
SHIDDHA ALU	$\frac{1}{2}$ PC	1 20 PER INCH	
SHIDDHA MISTI ALU	$\frac{1}{2}$ PC.	1 20 PER INCH	

STAPLES	MEASURING UNIT	UNIT PER BOX	
CHIRA (FLATTENED RICE)	I HANDFUL	1 20 PER INCH	
MURI (PUFFED RICE)	I HANDFUL	1 20 PER INCH	
ALUR BHAT	1	1 20 PER INCH	
KHICHURI (WITH VEG.)	1	1 20 PER INCH	
KHICHURI (W/O VEG.)	1	1 20 PER INCH	
BISCUIT	1 PC.	5 0 PER INCH	5 5 5 5 5 5

ABLES(PASTE OR FRY)	MEASURING UNIT	UNIT PER BOX	
ALU	1/2	1 20 IN AN INCH	
KACHU	1/2	1 50 IN AN INCH	
SIM / BARBATI	1/2	1 A 50 IN AN INCH	
PATA KAPI / MULA	1	1 50 IN AN INCH	
SAG (ALL KINDS)	1/2	1 36A 50 IN AN INCH	
CHICHINGA	1/2	1 50 IN AN INCH	
BEGUN	1/2	1 3A 50 IN AN INCH	
DHEROSH	1/2	1 3A 50 IN AN INCH	
HINGA	1/2	1 50 IN AN INCH A	
JSTE/KAROLLA	1/4	1 50 IN AN INCH	

VEGETABLES(CURRY OR RAW)	MEASURING UNIT	UNIT PER BOX	
FUL KAPI / MULA / CHICHINGA / SHASHA	1 PC.	5 5o IN AN INCH	5 5 5 5 5 5 5 5 5 5 5 5
MISHTI KUMRA / JHINGA / DHEROSH	1 PC.	5 A 5o IN AN INCH	5 5 5 5 5 5 5 5 5 5 5 5
BEGUN	2 PCS.	5 A 5o IN AN INCH	5 5 5 5 5 5 5 5
CHAL KUMRA / DATA / BARBATI / SIM	1 PC.	10 5o IN AN INCH 3A / INCH	10 10 10 10 10 10 10 10
KACHU MUKHI	1 PC.	2o IN AN INCH	5 5 5 5 5 5 5 5 5
LAU	1 PC.	5o IN AN INCH	
TOMATO	1 PC.	1 8o IN AN INCH	
KACHA MARICH	1 PC.	10 3A 5o IN AN INCH	10 10 10 10 10 10 10 10 10 10

MEATS	MEASURING UNIT	UNIT PER BOX	
FISH	1 PC.	17 170 INCH	17 17 17
BOILED DUCK EGG	½ PC.	1 30 PER BOX	
BOILED CHICKEN EGG	½ PC	1 30 PER BOX	
BEEF/MUTTON	2 PC.	1 70 PER BOX	
CHICKEN/PIGEON	2 PC.	1 60 PER BOX	
DAL (ALL KINDS)	1 PC	1 0 PER BOX	
OIL	1 G	5	5 5 5 5 5 5 5

FRUITS	MEASURING UNIT	UNIT PER BOX	
BANANA	½ PC.	0 IN AN INCH	
MANGO	1 PC.	38A 0 IN AN INCH	
JACK FRUIT	3 PCS.	5A 0 IN AN INCH	
KUL/BARAI	4 PCS.	0 IN AN INCH	
GUAVA	1 PC.	A/INCH 0 IN AN INCH	
PINEAPPLE	1 PC.	9A/INCH 0 IN AN INCH	
PAPAYA	1 PC.	11A 0 IN AN INCH	
KAMRANGA	1 PC.	0 IN AN INCH	
ORANGE	3 PCS.	5 0 IN AN INCH	5 5 5 5 5 5 5 5

200 original

IF #1

INFANT MODULE APPENDIX II

Child Name: _____ Child No: _____

Mother's Name: _____ Father's Name: _____

Bari : _____ Para : _____

Village: _____ Age (in Month)_____ Sex_____

(Child information to be collected form the mother/primary caretaker to be completed for each child in the age group 0- , months).

1. When and where was the child born ?

Morning	= 1	Own home	= 1
Noon	= 2	Parental home	= 2
Afternoon	= 3	Maternity Centre	= 3
Evening	= 4	Hospital	= 4
Night	= 5	Others	= 5

2. How long after the baby was born did you put the baby on tho breast ?

3. What was the first food given to the child ?

Colostrum (write local name) = 1
Honey = 2
Sugar + Water = 3
Misri (rock sugar) = 4
Cow's milk + Water = 5
Goat's milk + Water = 6
Powdered milk = 7
Tinned condensed milk + Water = 8

4. For how many days did you continue with the first food, eg. goat's milk, cow's milk, misri water etc. ?

   1. day = 1
   2. days = 2
   3. days = 3

5. When you gave other foods, did you continue to put the baby on the breast ?

   1. yes = 1
   2. No. = 2

6. Was this baby a full term or a premature baby ?

   Full term = 1
   Premature = 2

7. Now I would like to ask how you have been feeding your baby ? Does your baby receive breast milk ?

   Yes - 1 No - 2

8. Is he/she receiving anything else besides breast milk ?

   Yes - 1 No - 2

9. If yes, cow's milk = 1
   Goat's milk = 2
   Powdered milk = 3
   Rice powder = 4
   Flour (maida) = 5
   Arrowroot Barley = 6
   Robinson Barley = 7
   "Sothi" Barley = 8
   Other = 9

10. At what age supplementary liquid food was started? (The above mentioned foods)

   Before 1 month - 1
   1 month - 2
   2 month - 3
   3 month - 4
   4 month - 5

11. Why did you introduce other liquid foods?

Mother's illness	1
Baby ill could not suck.....	2
Insufficient milk.....	3
Baby did not like the breast milk ...	4
Wished to give something in addition to breast milk.....	5
Other	9

12. How do you decide when your baby is hungry? (Record Verbatium Response).

child cries - 1

mother knows time - 2

13. Do you give the breast whenever he/she seems hungry?

Yes - 1 No - 2

14. Do you usually give your baby both breasts at each feeding?

Yes - 1 No - 2

16. Between the time you got up, yesterday morning and the time you went to bed last night have many times did you breast feed your baby?

_____ times during day.

17. Between the time you got up yesterday morning and the time you went to bed last night, how many times did you breast feed your baby?

_____ time during night.

18. Would you say that your baby gets more breast milk, more supplementary liquid, an equal amount of each?

more breast milk 1
more supplementary liquid (formula, powder-milk, goat's milk, cow's milk) 2
An equal amount of each 3
Don't know 5

19. How old was the baby when he/she was given other supplementary liquid:

_____ days _____ weeks _____ months

20. Is the formula, milk or barley given by yourself or someone else?

Self 1
Other 2

21. When you give the formula or other milk, how do you give it?

bottle 1
cup/spoon 2
other (shells)..... 3
describe .....

22. How many times during the day do you prepare the supplementary feeding?

Once a day 1
Twice a day 2
Thrice a day 3
Every time the child is fed 4

23. What solid food is your baby eating now?

Rice 1
Dal (pulses)..... 2
Fish 3
Eggs 4
All vegetables..... 5
All shag (leafy greens) 6
Mangoes..... 7
Jackfruit 8
Other 9

24. At what age did you start giving solid food from the family meal

_____ Months _____Year

25. Are you familiar with hot, cold and nirog categories of food?

Yes - 1 No - 2

26. Of these three groups of foods which type would you give to the baby first?

Hot 1
Cold 2
Nirog (disease free)... 3

27. At this time, would you say your baby is just getting used to the solid or is eating an adequate quantity of solid food?

Picking up few pieces of rice
(not eating solid regularly).... 1

Eats adequate amount of solid
food from the family pot 2

28. Do you or anybody else feed solid to the child or the child is eating on his/her own.

Self - 1 Fed by mother/caretaker - 2

29. Foods given to the boby (last 24 hours)

	How often	Fed by	
Breast milk			
Cow's milk/Goat's milk			
Formula			
Barley			
Rice powder			
Dal (pulses)			
Fish			
Vegetables (kind?)			
Shag (leafy greens)			
Eggs			
Fruits			
Rice			
Ruti/chapri			
Alu			
Misty Alu			
Others			

30. Would you think it is too much of a problem to cook separately for the young child?

Yes _____ No _____

31. If yes, why takes time? 1
a hassle 2
has other work 3
cannot afford 5
extra fuel 4
other..... 9

32. For mothers giving solid food at 1 year or later (What is your reason for not giving solid food before 1 year?)

(Record verbatium)

_____

_____

33. [For mothers who gave solid food before 7 or 8 months]

What made you decide to give solid food at this age?

(Record verbatium)

_____

_____

INFANT FODULE (_____) I.F. #2

Be completed not being done now

Child Name _____ Child No. _____ HHs # _____

Mother's Name _____ Father's Name _____

Bari _____ Para _____ HHs # _____

Village _____ Age (in Month) _____ Sex _____

1. Does your baby receives breast milk?

   Yes = 1 No = 2

2. Is he/she receiving anything else beside breast milk?

   Yes = 1 No = 2

3. If yes.

	Age of introduction	Fed by	How often	
Cow's milk = 1				
Goat's milk = 2				
Flour (Maida) = 3				
Rice powder barley = 4				
Barley (arrowroot, Rabinson's, Soti) = 5				
Biscuit = 6				
Chira = 7				
Muri = 8				
Bhat Rice = 9				
Potato = 10				
Atar ruti/chapati = 11				
Rice's ruti/chapati = 12				
Vegetable = 13				
Sag (greens) = 14				
Fish = 15				
Meat = 16				
Egg = 17				
Banana = 18				
Jack fruit = 19				
Mango = 20				
Others = 21				
Unknown = 22				
Dal = 23				

4. How do you decide when your baby is hungry? (Record verbatium response)

5. Are you familiar with Hot, Cold, Nirog categories of food?

   Yes = 1 No = 2

6. Of these three types of food, which type would you give the baby first?

   Hot = 1
   Cold = 2
   Nirog= 3

7. At this time would you say your baby is just getting used to the solid food or eating an adequate quantity of solid food?

   Picking up few grains of rice = 1
   (not eating regularly)

   Eats adequate amount of solid food from the family pot = 2

8. Do you or anybody else feed solid to the child ro the child is eating on his/her own.

   Self = 1 Mother = 2 Caretaker = 3

9. Foods given to the baby last (24 hours)

[illegible]	How Often	Fed by	Quantity

10. Would you think it is too much of a problem to cook separately for your child.

Yes = 1 No = 2

11. If yes, why?

takes time	=	1
a hassle	=	2
has other work	=	3
extra fuel	=	4
can't afford	=	5
Others	=	6

12. For mothers giving solid food at 1 year or later (what is your reason for not giving solid before 1 year) (Record verbatium response)

13. For mothers who gave solid food before 7 or 8 months (what made

(Record verbatium response)

14. How do you feel about giving the following foods to your child at age 6 or 7 months.

	should be given	should NOT be given	may be given	remarks
Rice	1	2	3	
Potato				
Khichuri (with Dal)				
Atar Jau				
Jau (Rice)				
Dal				
Sag (greens)				
Vegetables				
Fish				
Egg				
Banana				

Anthropometry

Form for Recording:

Child's Age

Height

Weight

Arm circumference

Mother's Arm Circumference

SES SCHEDULE

Household Number

Name of Interviewer _____

Village _____

Date of Interview _____

Para _____

Bari _____

SL No.	Name of household members	Age	Sex	Actual Bengali month at which the baby born (0-24 mo)	Order of birth of the children born to this household	Relationship to the head of household
1.						Head
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						
13.						
14.						
15.						
16.						
17.						
18.						
19.						
20.						

Socio-economic Data

1. Land holding

Type	Nil	Local Unit	Decimal	Remarks
Homestead (Bari)				
Own land under self cultivation				
Land leased in				
Land leased out				
No Agricultural land				

2. Food in Stock

Food	quantity	Remarks
Rice		
Whrat		
Rice powder		
Chira		
Muri		
Khai		
Dal		

3. Yearly Income

Sources	Produce	Taka	Remarks
Agricultural Labor			
Agricultural Product			
Non-Agricultural Wage Work			
Employment (office work)			
Business (Specify)			
Others (Specify)			

4. Education

Father's Education _____

Mother's Education _____

Highest Education in the Household _____

5. Do you have any outstanding loan which you find difficult to repay (If yes, write the amount).

Household No._____ Respondent_____

Village _____

FOOD CATEGORIES

Variable #	Infant's Food	Hot	Cold	Nirog	Don't know	Remarks
59	Colostrum					1 = HOT 3 = NIROG 2 = COLD 4 = COLD & NIROG 5 - DONT KNOW
61	Breast Milk					BLANK = MISSING DATA
62	Barley+Water+Sugar					
63	Barley+Water+Gur					
64	Flour Maida+Water+Sugar					
65	Maida+Water+Gur					
66	Ricepowder+Water+Gur					
67	Goat's Milk					
68	Cow's Milk					
69	Powder Milk					
70	Condensed Milk					
71	BISCUIT					

REMARKS TO CALL NIROG

* MAKES NO HARM
* HEALTH PROMOTING
BLOOD PRODUCING
CLEANSES THE BLOOD

"VITAMIN"
GOOD FOR HEALTH
IT'S GOOD - "BNALOI"

	CEREALS	Hot	Cold	Nirog	Don't know	Remarks
72	Shiddha Bhat					
73	Atop Bhat					
74	Jau (shiddha rice)					
75	Jau (atop rice)					
76	Atar ruti					
77	Khichuri (without vegetables)					
78	Khichuri (with vegetables)					
79	Misti alu (shiddha)					
80	Gol alu					
81	Atar jau					
82	Chapri					
83	Chira					
84	Muri					

F I S H	Hot	Cold	Nirog	Don't know	Remarks
Puti					
Tiny shrimp					
Tengra					
Mala					
Bain					
Bajori					
Shing					
Magur					
Ayr					
Koi					
Taki					
Shoil					
Nala					

	FISH	Hot	Cold	Nirog	Don't know	Remarks
85	Pabda					
86	Boal					
87	Hilsha					
88	Rui					
89	Katla					
90	Mrigel					
91	Naila Tika					
92	Shilong					
93	Gojar					
94	Chewa					
95	Chapila					
96	Bata					
97	Chitol					

	MEAT	Hot	Cold	Nirog	Don't know	Remarks
98	Beef					
99	Mutton					
100	Chicken					
101	Duck					
102	Pegion					
103	Chicken Egg					
104	Duck Egg					

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	Vegetables	Hot	Cold	Nirog	Don't know	Remarks
105	Badha Kapi					
106	Ful Kapi					
107	Radish					
108	Sim					
109	Barboti					
110	Begun					
111	Lau					
112	Tomato					
113	Chal Kumra					
114	Misty Kumra					
115	Data					
116	Karolla					
117	Dharosh					

	Vegetables	Hot	Cold	Nirog	Don't know	Remarks
118	Kacha Kala					
119	Chichinga					
120	Kachur Mukhi					
121	Kachu					
122	Kachur Lati					
	Leafy vegetables	**Hot**	**Cold**	**Nirog**	**Don't know**	**Remarks**
123	Lal Shag					
124	Data Shag					
125	Palong Shag					
126	Pat Shag					
127	Mator Shag					
128	Pui Shag					
129	Mula Shag					
130	Sharisha Shag					

	Leafy Vegetables	Hot	Cold	Nirog	Don't know	Remarks
131	Lau Shag					
132	Kumra Shag					
133	Bathua Shag					
134	Koloi Shag					
135	Kolmi Shag					

	Dal and Spices	Hot	Cold	Nirog	Don't know	Remarks
136	Musuri					
137	Khashari					
138	Kala Koloi					
139	Boot Ground lentils					
140	Halud (Turmeric)					
141	Marish (Red Pepper)					
142	Jira (Cumin)					
143	Ada (Ginger)					
144	Peaj (Onion)					
145	Roshun (Garlic)					
146	Kala Jira					

FRUITS	Hot	Cold	Nirog	Don't know	Remarks
147 Sagar Kala					
148 Shabri Kala					
149 Champa Kala					
150 Bichi Kala					
151 Papaya					
152 Mango					
153 Jack Fruit					
154 Bel					
155 Kul/Boroi					
156 Pineapple					
157 Kamranga					

SUGAR	Hot	Cold	Nirog	Don't know	Remarks
158 White Sugar					
159 Misri (Rock Sugar)					
160 Akher Gur					
161 Khejur Gur					

WEEKLY [illegible] RECORD

1st week _____ 5th week _____

2nd week _____ 6th week _____

3rd week _____ 7th week _____

4th week _____ 8th week _____

Child's Name _____ Child's Number _____

Mother's Name _____ Father's Name _____

Age _____ Sex _____ Village: _____

1. In the past week did your child suffer from any illness?

Yes=1 No=2

2. If yes, record the following:

(2.6.8) [illegible]	Symptoms
01 = none	1 diarrhoea
02 =	
3 =	
4 =	
5 =	
6 =	

3. Duration:-

(Day of Onset)

1st week _____ 5th week _____

2nd week _____ 6th week _____

3rd week _____ 7th week _____

4th week _____ 8th week _____

4. Severity (describe in details)

TREATMENT PATTERNS (DESCRIBE IN DETAILS)

HOME CARE (Sources & Treatment)	OTHER TYPES OF CARE (Sources & Treatments)

D I E T

REGULAR	CHANGE IF ANY (ADDITION OR WITHDRAWAL)

APPENDIX C

TALLIES

CARD PLAN

CULTURALLY BASED NUTRITION EDUCATION PROJECT

HOUSEHOLD INDIVIDUAL CARD

	Variables	Column	Code
SES	SURVEY		
1.	Study No.	1-3	245
2.	Village	4	Gorasin = 1, Taratia = 2, Gosai Bari Kumulli = 3, Latifpur = 4, Narundha = 5, Payla = 6.
3. 5.	Para	~~5-6~~	Pub = 01, Uttar = 02, Pashim = 03, Dakhin = 04, Tanti (karigor) = 05, Dakhin-Pub = 06, Dakhin-Pashchim = 07, Uttar-Pub = 08, Uttar-Pashshim = 09, Khan = 10, Mondol = 11, Pal = 12, Sheikh = 13, Mazi = 14, Thakur = 15, Munshi = 16, Modhoyo Para = 17, Sarker Para = 18, Aatir Para = 19, Jele Para = 20, Nomo Para = 21, Jamidar Para = 22, Unknown = 99.
4.	Household No.		Exact No.
5. 4	Individual No.	~~10-11~~	Pick those births who died, as 00 Ind.No.
6.	Age (yr-mo)	12-15	Calculate age udner 2 from Bengali calendar month. Below 29 days = 00, Unknown = 99.
7.	Bengali month of birth	16-17	Baishak = 01, Jestra = 02, Asar = 03, Srabon = 04, Vadra = 05, Aswin = 06, Kartic = 07, Agrahayan = 08, Pous = 09, Magh = 10, Falgun = 11, Chaitra = 12, Unknown = 99.
8.	Sex	18	Male = 1, Female = 2, Unknown = 9.
9.	Family size	19-20	Exact No.
10.	Age of mother (in year)	21-22	Unknown = 99.

	Variables	Column	Code
11.	Birth Order	23-24	0 = 00, 1 = 01, 2 = 02, 3 = 03, 7 = 07, 8 = 08. UK=99
12.	Relationship with Head	25-26	Self = 01, wife = 02, son = 03, daughter = 04, daughter-in-law = 05, Husband = 06, son-in-law = 07, brother = 08, brother's wife = 09, sister = 10, sister's husband = 11, grandson = 12, grandmother = 13, nephew = 14, niece = 15, father = 16, mother = 17, uncle = 18, brother-in-law = 19, sister-in-law = 20, other relative = 21, not related = 22, not known = 23, unknown = 99.
13.	Land Holding (Decimals)		
	Homestead	27-29	Self coded
	Self cultivated land	30-33	Self coded
	Land leased in	34-36	Self coded
	Land leased out	37-39	Self coded
14.	Food in Stock (seers)		
	Rice/Paddy	40-43	Self coded
	Wheat/Ata	44-46	Self coded
	Ricepowder	47-48	Self coded
	Chira	49-50	Self coded
	Muri	51-52	Self coded
	Dal (Musur, Khesari kala kalai)	53-55	Self coded
	Others (misti alu, potato, tin or packet milk milk)	56-58	Self coded
15.	Yearly Income (Tk.in 000)		
	Agricultural Labour	59-61	Self code
	Agricultural Products	62-65	Self coded
	Non-agricultural wage	66-69	Self coded
	Service	70-73	Self coded
	Business	74-77	Self coded
	Others (Begging etc)	78-79	Self coded

Variables	Column	Code
16. Father's Education	80-81	No education = 00, 1 = 01, 11 = 02, X/SSC = 10, I.A./I.Sc/I.Com = 11, B.A/B.Sc./B. Com = 12, M.A./M.Sc./ M.Com = 13, M.B.B.S./Engineering = 14, Madrasha = 15, Unknown = 99.
17. Mother's Education	82-83	No education = 00, 1 = 01, 11 = 02, Ten/SSC = 10, I.A./I.Sc/I. Com = 11, B.A./B.Sc/B.Com = 12, M.A./M.Sc/M.Com= 13, M.B.B.S./Engineering = 14, Madrasha = 15, Unknown = 99.
18. Highest Education	84-85	Same
19. Credit (Tk. in 000)	86-87	Self coded use one column as decimal
20. Interviewers:	88	A.D. Khan = 1 S. Ahmed = 2 Salem Akhtar = 3 Afzalunness = 4 N. Rizvi = 5 Unknown = 9
21. Follow up Selection	89	Mother included = 1 Child included = 2 Not included = 0
22. Those who died (age at death)	90-93	
23. Card ~~Type~~ Number.	94	1

Message design ← NEA

NOS variables		col^ms	code	Question
25		99	agree = 1 disagree = 2	
26		100	very strongly agree = 1, strongly agree = 2 Not very strongly agree = 3	~~Not~~ not very strong strong disagree v. strongly dis
27	add extra question. Change code scheme	101	agree = 1 disagree = 2	
28		102	V. S = 1 S = 2 Not. very strong = 3	
29		103	yes = 1 No = 2	3
30		104	very much = 1 little = 2 not very much = 3	
31		105	agree = 1 disagree = 2	4
32		106	V. S = 1 S = 2 Not VS = 3	
33.		107	Agree = 1 disagree = 2	5
34		108	V. S = 1 S = 2 Not V.S = 3	
35		109	agree = 1 disagree = 2	6
36		110	V. S = 1 S = 2 Not V.S = 3	
37		111	agree = 1 disagree = 2	7

38	112	V. S = 1 S = 2 Not V.S = 3	
39	113	Agree = 1 disagree = 2	8
40	114	V.S = 1 S = 2 Not V.S = 3	
41	115	Agree = 1 disagree = 2	9
42	116	V.S = 1 S = 2 Not V.S = 3	
43	117	A = 1 DA = 2	10
	118	V. S = 1 S = 2 Not V.S = 3	
44	119	A = 1 D.	11
45	120	V.S = 1 S = 2	
46	121	A = 1 DA = 2	12
47	122	V'S = 1, S = 2, Not V.S = 3	
48	123	A = 1 DA = 2	13
49	124	V.S = 1, S = 2, N.V.S = 3	
50	125	A = 1 DA = 2	14
51	126	V.S = 1, S = 2, N.V.S = 3	
52	127	A = 1 DA = 2	15
53	128	V.S = 1 S = 2, N.V.S = 3	
54	129	don't know = 1 good for health = 2 doesn't cause disease = 3 others = 4	16
	~~130~~	Least 10 add 5 =	
55	130	A = 1 DA = 2	17
56	131	V.S = 1 S = 2, N.V.S = 3	
57	132	Every day = 1, 3-4 day/wx = 2 less often = 3	18
58	133	Same	19.

67

Food category

No.	Variables Names	Col^ms	Code	Questi
59		134	Hot=1, Cold=2, Nitrog=3 C+N=4 Don't know:5 Blank = MISSING DATA.	
60		135		
61		136		
62		137		
63		138		
64		139		
65		140		
66		141		
67		142		
68		143		
69		144		
70		145		
71		146		
72		147		
73		148		
74		149		
75		150 ⟹ card Number = 1		
		CARD NO 2		
	Study NO -	1-3	245	
	village	4	GO=1, TA=2 DA=6 LA=4.	
	H/H NO -	5-7		
	IND NO -	8-9		
76		10		
77		11		
78		12		
79		13		
80		14		
81		15		
82		16		
83		17		
84		18		
85		19		

Variable No		Col^ms		Code
86		20		
87		21		
88		22		
89		23		
90		24		
91		25		
92		26		
93		27		
94		28		
95		29		
96		30		
97		31		
98		32		
99		33		
100		34		
101		35		
102		36		
103		37		
104		38		
109		39		
110		40		
111		41		
112		42		
113	DIETARY-	RD - 1 43-46	Child - 1 ~~No~~	Calorie = actual NO
114	DIETAR	RD - 1 47-50	child - 2	Calorie = actual No.
115	DIETARY	RD - 1 51-54	Mother-	Calorie = actual int
116	DIETAY	RD - 1 55-57	child = 1	Protein = actual int
117		58-60	child = 2	protein = actual in
118		61-63	Mother	protein = " int

19	DIETARY	RD-1	child = 1	vitamin = actual intake
		64-68		
		69-73	child = 2	vitamin - actual
		73-77	Mother	vitamin-actual

DIETARY RD - 2

22	74-77	child-1	eatorie = Act
123	78-81	child-2	Calorie = Act
124	82-85	Mother-	Eatr - actual
125	86-88	child = 1	protein = actual
126	89-91	child = 2	protein =
27	92-94	Mother	protein
28	95-99	Child -	vita = actu
29	100-104	child-2	vita
30	105-109	~~Mother~~ - 3	vita

DIETARY RD - 3

31	109 113	child	Catorie
32	114-117	child(2)	-calorie
133	118-121	Mother	- Catorie
134	122-124	Child (1)	protein
135	125-127	child (2) -	protein
136	128-130	Mother -	protein
137	131-135	child (1)	vita.
138	136-140	child (1) -	vita
139	141-145	Mother -	vita

Anthropometry

RD-1

148-149 Blank

142 Card No. - 2 → 150

Card No - 3 → ~~[illegible]~~

143	Study No -	1-3		245
144	village -	4		GA=1
145	H/H No -	5-7		
146	IND No -	8-9		
147	RD-1	height	10-13	actual
148	RD-1	wt -	14-16	actual.
149	RD-1	A/C (child)	17-19	actual
150	RD-1	A/C (mother)	20-22	actual
151	(RD-2)	child age	23-24	actual
152	(RD-2)	height	25-28	"
153	(RD-2)	wt	29-31	"
153	(RD-2)	A/C (child)	32-34	actual
154	(RD-2)	A/C (mother)	35-37	actual
155	(RD-3)	child's age -	38-39	"
156	(RD-3)	height	40-43	"
157	(RD-3)	wt -	44-46	"
158	(RD-3)	A/C (child)	47-49	"
159	(RD-3)	A/C (mother)	50-52	"
160	(RD-4)	child age -	53-54	
161	(RD-4)	height	55-58	
162	(RD-4)	wt	59-61	
163	(RD-4)	A/C (child)	62-64	
164	(RD-4)	A/C (mother)	65-67	

165	(RD-5)	child age (in mon)	68-69
166	(RD-5)	Ht	70-73
167	(RD-5)	Wt	74-76
168	(RD-5)	AFC (child)	77-79
169	(RD-5)	AFC (mother)	80-82
170	(RD-6)	child age	83-84
171	(RD-6)	height	85-88
172	(RD-6)	Wt	89-91
173	(RD-6)	AFC (child)	92-94
174	(RD-6)	AFC (mother)	95-97
175	(RD-7)	child age (in mo)	98-99
176	(RD-7)	height	100-103
177	(RD-7)	Wt	104-106
178	(RD-7)	AFC (child)	107-109
179	(RD-7)	AFC (mother)	110-112

180	No. of times diarrhea in 52 weeks = 113-114	actual no
181	No. of times dysentery in 52 weeks = 115-116	actual N

INFANT FEEDING - I

182	anything besides breast milk	113	Yes = 1 No = 2 1 → 9	Questi 8
183		114		9
184	age of introduction of supp. liquid	115		10
185	Why they Introduce	116		11
186	How decide	117		12
187	what solid food	118		23
188	At what age (Solid)	119-120		24
189	Food category	121		26

190 pickup/adequate 122 27
191 problem 123 30
192 Introduction solid food 12mo. 124 32
192 whom decide 125 33

Questionnaire – 2 INFANT FEEDING

193 Age of introduction Biscuit 126-127 Q-3
194 " " " chira 128-129 Q-3
195 " " " Murri 130-131 Q-3
196 " " " Bhat 132-133 Q-3
197 " " " patata 134-135 Q-3
198 " " " Atar Ruti 136-137 Q-3
199 " " " vegetable 138-139 Q-3
200 " " " Shag – 140-141 Q-3
201 " " " fish – 142-143 Q-3
202 " " " Egg – 144-145 Q-3
203 " " " Banana – 146-147 Q-3
204 " " " Mango – 148-149 Q-3

Card Number – 2 150

Card Number – 4 Started
Study No – 1-3 245
Village – 4
HH No – 5-7
IND No – 8-9

205 age of introduction of Dal 10-11 Q-3

				Question
206	Hungry	12		Q-4
207		13	Yes=1 No=2	Q-5
208	Food Category	14		Q-6
209	pick up/adequate	15		Q-7
210	Solid food	16		Q-12
211	7/8 month	17		Q-13
212	Rice	18	Should given=1 Should not give=2 May be given=3	Q-14
213	potato	19		
214	Khichuri (with Dal)	20		
215	After Jau	21		
216	Jau (rice)	22		
217	Dal	23		
218	Shag	24		
219	vegetables	25		
220	Fish	26		
221	Egg	27		
222	Beenana	28		

APPENDIX D

MESSAGE DESIGN QUESTIONNAIRE - NUTRITION EDUCATION ATTITUDES

MESSAGE DESIGN QUESTIONNAIRE - NUTRITION EDUCATION ATTITUDES

HOUSEHOLD NO._____

1. It is important to breast feed your child until the child is 24 months old

_____agree(1) _____disagree(2)

How strongly agree/disagree

_____very strongly(1) _____strongly(2) _____not very strongly(3)

2. There are some mothers in this village who do not have enough breastmilk to feed their child at 7-8 months

_____ agree(1) _____ disagree (2)

How stron . . agree/disagree

_____very strongly(1)_____strongly(2)_____not very strongly(3)

3. Some children's fathers boast that their children get nothing but milk until they are 18-24 months.

Does your child's father act the same way?

_____yes (1) _____No (2)

If yes, he boasts

_____very much (1)_____little(2)_____not very much.(3)

4. If a child can pick up food and feed itself it means that the child can digest the food, do you

_____agree(1) _____disagree (2)

How strongly agree/disagree

____very strongly(1) _____strongly(2) _____not very strongly (3)

5. If a child picks up some rice or potato or 7-8 months, you should take the rice or potato away from the child. Do you:

_____agree (1) _____disagree (2)

How strongly agree/disagree

_____very strongly (1) _____strongly (2) _____not very strongly (3)

6. Most women in this village pay attention to the advice their mother-in-law or older sister-in-law give about infant feeding

_____agree (1) _____disagree (2)

How strongly agree/disagree

_____very strongly (1) _____strongly (2) _____not very strongly. (3)

7. Most women in this village get approval from the child's father before feeding solids to their babies less than 12 months old.

_____agree (1) _____disagree (2)

How strongly agree/disagree

_____very strongly (1) _____strongly (2) _____not very strongly (3)

8. If you feed a child less than 12 months rice with a few drops of oil and the child gets diarrhoea, the child's father will be angry. Do you:

_____agree (1) _____disagree (2)

How strongly agree/disagree

_____very strongly (1) _____strongly (2) _____not very strongly (3)

Feeding a child 7-8 months old more than a taste of rice will cause diarrhea

A D

— VS — S — NVS

9. Feeding child 7-8 months old habi jabi (chira, muri, biscuit, banana, sweets) will cause diarrhea.

_____agree (1) _____disagree (2)

How strongly agree/disagree

_____very strongly (1) _____strongly (2) _____not very strongly. (3)

10. If a child has diarrhea, it makes me upset because it involves a lot of extra wok.

_____Agree (1) _____Disagree (2)

How strongly agree/disagree

_____very strongly (1) _____strongly (2) _____not very strongly. (3)

11. Some mothers are willing to try feeding their child some potato or rice at 7-8 months if they know they can get some medicine for diarrhea. Would you be willing to feed your child at 7-8 months if you had some medicine for diarrhea ?

_____agree (1) _____disagree (2)

How strongly agree/disagree

_____very strongly (1) _____strongly (2) _____not very strongly. (3)

12. There are young children in this village who are small because they do not get enough food to eat.

_____agree (1) _____disagree (2)

How strongly agree/disagree

_____very strongly (1) _____strongly (2) _____not very strongly (3)

13. It is a more important to raise chickens from eggs than to feed eggs to a young child .

_____agree (1) _____disagree (2)

How strongly agree/disagree

_____very strongly (1) _____strongly (2) _____not very strongly. (3)

14. My husband shows interest in the way I do things around the house (i.e. child care). Do you agree ?

_____agree (1) _____disagree (2)

How strongly agree/disagree

_____very strongly(1) strongly(2) _____not very strongly.(3)

15. The child's father likes to bring a biscuit, banana or sweet to the child from the market.

_____agree(1) _____disagree (2)

How strongly agree/disagree

_____very strongly(1) _____strongly(2) _____not very strongly.(3)

16. What do you understand by the work NIROG.

_____don't know (1) _____does not cause disease or does not have harmful effect (3)

_____good for health (2) other (4)_____

Note to Fieldworker: Now Explain the word, if don't know.

17. I am willing to feed my children nirog or foods that do not cause any disease or harm, before they are 12 months old.

_____agree (1) _____disagree (2)

How strongly agree/disagree

_____very strongly(1) _____strongly (2)_____not very strongly.(3)

18. In this household we have rice

_____every day (1) _____3-4 days/wk. (2) _____less often (3)

19. In this household we have potatoes

_____every day(1)_____3-4 days/wk(2)_____less often (3)

APPENDIX E

CULTURAL BARGAINING

APPENDIX E: CULTURAL BARGAINING

Dr. Rizvi has adopted the terms "cultural bargaining" and "cultural negotiating" to describe the process whereby the intervener attempts to persuade the subject of an intervention to try something. Since the subject of the intervention may not be able or willing to implement the recommendation exactly as wished by the intervener, discussion occurs until a compromise is reached. Rizvi cites the work of Nichter and Nichter as her primary reference for this process.

Dr. Rizvi provided the following example of cultural bargaining, or negotiating. While in a compound discussing a child with his father, Dr. Rizvi found that the child had just recovered from tetanus. She inquired about the child's current health, especially about his stools. The father said that the stools were a little loose. Rizvi discussed that with the father and praised the child's altertness. She then asked the father if he would consider giving more than milk to the child. The father agreed. Rizvi also asked if the father would give the child some solid foods at his seventh or eighth month. The child's father responded that his own father would know best and told Rizvi to ask him. The grandfather, who was present, said that it would be all right to give rice and chira to the little boy. Rizvi suggested that they should try it.