

Principal Investigator A.K.M Alauddin Trainee investigator (if any) Nil

Application No 77-027 Chowdhury Supporting Agency (if Non-CRL) Nil

Title of study D. Natural Fertility Project status:
 New Study
 Continuation with change
 No change (do not fill out rest of form)

Circle the appropriate answer to each of the following (If Not Applicable write NA):

1. Source of Population:
 - a) Ill subjects Yes No
 - b) Non-ill subjects Yes No
 - c) Minors or persons under guardianship Yes No
2. Does the study involve:
 - a) Physical risks to the subjects Yes No
 - b) Social risks Yes No
 - c) Psychological risks to subjects Yes No
 - d) Discomfort to subjects Yes No
 - e) Invasion of Privacy Yes No
 - f) Disclosure of information possibly damaging to subject or others Yes No
3. Does the study involve:
 - a) Use of records (hospital, medical, death, birth or other) Yes No
 - b) Use of fetal tissue or abortus Yes No
 - c) Use of organs or body fluids Yes No
4. Are subjects clearly informed about:
 - a) Nature and purposes of study Yes No
 - b) Procedures to be followed including alternatives used Yes No
 - c) Physical risks Yes No N.A.
 - d) Sensitive questions Yes No
 - e) Benefits to be derived Yes No
 - f) Right to refuse to participate or to withdraw from study Yes No
 - g) Confidential handling of data Yes No

5. Will signed consent form be required:
 - a) From subjects Yes No
 - b) 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. A description of the 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 Board for review.

We agree to obtain approval of the Review Board on Use of Human Volunteers for any changes involving the rights and welfare of subjects before making such change.

Al
Principal Investigator

Trainee

Please return 2 copies of entire protocol to Chairman, Review Board on Use of Human Subjects.

INFORMATION TO INCLUDE IN ABSTRACT SUMMARY

The Board will not consider any application which does not include an abstract summary. The abstract should summarize the purpose of the study, the methods and procedures to be used, by addressing each of the following items. If an item is not applicable, please note accordingly:

1. Describe the requirements for a subject population and explain the rationale for using in this population special groups such as children, or groups whose ability to give voluntary informed consent may be in question.
2. Describe and assess any potential risks - physical, psychological, social, legal or other - and assess the likelihood and seriousness of such risks. If methods of research create potential risks, describe other methods, if any, that were considered and why they will not be used.
3. Describe procedures for protecting against or minimizing potential risks and an assessment of their likely effectiveness.
4. Include a description of the methods for safeguarding confidentiality or protecting anonymity.
5. When there are potential risks to the subject, or the privacy of the individual may be involved, the investigator is required to obtain a signed informed consent statement from the subject. For minors, informed consent must be obtained from the authorized legal guardian or parent of the subject. Describe consent procedures to be followed including how and where informed consent will be obtained.
 - (a) If signed consent will not be obtained, explain why this requirement should be waived and provide an alternative procedure.
 - (b) If information is to be withheld from a subject, justify this course of action.
6. If study involves an interview, describe where and in what context the interview will take place. State approximate length of time required for the interview.
7. Assess the potential benefits to be gained by the individual subject as well as the benefits which may accrue to society in general as a result of the planned work. Indicate how the benefits outweigh the risks.
8. State if the activity requires the use of records (hospital, medical, birth, death or other), organs, tissues, body fluids, the fetus or the abortus.

The statement to the subject should include information specified in items 2,3,4 and 7, as well as indicating the approximate time required for participation in the activity

Received 27/9/77
77-027

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(Cover Page - Use this format exactly as outlined
with numbers and headings)

SECTION I - RESEARCH PROTOCOL

- 1) Title: DETERMINANTS OF NATURAL FERTILITY
- 2) Principle Investigator: A.K.M. ALAUDDIN CHOWDHURY
- 3) Starting Date: OCTOBER 1975
- 4) Completion Date: OCTOBER 1978
- 5) Total Direct Cost: U.S.\$ 61,357.00 (for last 24 months)
- 6) Abstract Summary (250 words or less): This study will explore -
the interrelationship and predictive
value of Husband's occupation, and
absence, wife's activities, education,
poverty, morbidity, malnutrition,
child death, breast feeding with compo-
nents of birth process like (1) menarche,
(2) change in marital status, (3) con-
ception, (4) gestation, (5) post
partum amenorrhoea and (6) menopause.
- 7) Reviews: (Leave Blank)
 - a) Research Involving Human Subjects: _____
 - b) Research Committee: _____
 - c) Director: _____
 - d) BMRC: _____
 - e) Controller: _____
 - f) Administrator: _____

NUTRITIONAL AND PHYSIOLOGICAL DETERMINANTS
OF NATURAL FERTILITY

Alauddin Chowdhury
Sandra L. Huffman
L.C. Chen
w.H. Mosley

RESEARCH PLAN

Background

The decennial population censuses of Bangladesh provide a basis for computing a growth rate at intervals of ten years but this basis is questioned too often by the experts to be of any value to the users. Besides, these censuses do not provide any insight into the dynamics of population growth. No reliable and efficient system of recording birth, death and migration is functioning as yet in Bangladesh. Little was known about the detailed demographic characteristics of the people of Bangladesh either from official or unofficial sources until 1966 when the Cholera Research Laboratory (CRL) of Dacca began to collect and process information on the births, deaths, and migrations that occurred in 132 villages in the Cholera Vaccine Field Trial areas of the Matlab Bazar Thana in the Comilla District, Bangladesh.

Reports of the basic demographic features of the survey population for the years 1966-1969 have been published by the Cholera Research Laboratory, and a summary report 1966-1973 is in preparation. The population of the field surveillance area (FSA), roughly numbering 260,000, are under continuous observation by a team of trained field staff who record and report any vital event that occurs in every household in the area.

In the vaccine field trail area in Comilla District, the CRL has provided the population with immunizations against cholera and facilities for

the treatment of purging diarrheas, which may have resulted in a reduction of mortality. Another result of their efforts has been the establishment of a cordial relationship with the people of the area which has a direct bearing on the ready cooperation of the public in the collection of demographic and other specialized data.

The Matlab population has also been used for special demographic studies, of which the following are completed or are in progress:

- 1) A study of maternal mortality, by Dr. Melita Gesche and Dr. Shamsa Ahmad.
- 2) A study of the age-parity specific birth rates among married, menstruating women, by Mr. Alauddin Chowdhury and Dr. W. H. Mosley.
- 3) A study of factors influencing neonatal and infant mortality, by matching of birth and death records, by Mr. Alauddin Chowdhury.
- 4) A study of the patterns of fertility and fetal wastage, by Dr. Melita Gesche and Dr. Shamsa Ahmad.
- 5) Fertility in relation to child mortality by Alauddin Chowdhury.
- 6) Cohort analysis of child mortality by Alauddin Chowdhury, George Curlin and Dr. Lincoln Chen.

The trend in fertility and infant mortality of the Matlab area reflects an unusual pattern. The total fertility rate (TFR) is declining while on the contrary the infant mortality rate (IMR) is not declining.

As the family planning practice in the population is negligible, this pattern seemed to be contradictory to child survival hypothesis to subsequent fertility. The decreases in post-partum sterility of mothers due to infant death and parents' replacement motivation both together to raise the fertility.

TABLE I

	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73
TFR	6.7	6.3	6.3	6.1	5.9	6.0	5.5
IMR	111*	125	124	127	131	146	128

* exact age of the infant was not available, only reported age at death were used.

We do not know what factors are currently operating in reducing births socio-economical factors such as occupational absence of husband, occupational activities of wives, education, poverty etc., or biological factors such as malnutrition, morbidity, etc. or both may be contributing to the picture. Neither do we understand how these factors are operating on each of the following components of the birth process: (1) menarche, (2) change in marital status, (3) conception, (4) gestation, (5) postpartum amenorrhea, (6) menopause, (7) female deaths.

In recent years due world-wide inflation, Bangladesh faced an acute food shortage and a separate study showed that the nutritional status of Bangladesh children deteriorated in 1972-1973. The nutritional status and morbidity of mothers may play a role in an intervening variable in the complex

interrelationship between fertility and infant deaths. If so, which components of the birth process are affected and to what magnitude?

The role of postpartum amenorrhea in birth interval dynamics is quite significant. Studies conducted in Matlab found that the average length of amenorrhea experienced by a woman with a live infant was 17 months. This represents 45% of the birth interval and thus profoundly influences a woman's fertility experience.

The mechanisms responsible for postpartum amenorrhea, however, are not well understood, though evidence suggests that it is related to the mother's nutritional status and to her lactational patterns. Supplementation of the breastfed infant decreases the duration of amenorrhea, thus women who breastfeed their infants fully tend to have longer periods of amenorrhea than those who supplement breastmilk with other foods. It appears that supplementation alters the frequency, duration and intensity of nursing, and thus the frequency of nipple stimulation. The physiological mechanism proposed to be responsible for the prolongation of amenorrhea is related to nipple stimulation. The suckling stimulus on the nipple may cause the depletion of hypothalamic norepinephrine which may affect hormones necessary for ovulation to occur.

The nutritional status of the mother may also be involved in causing variations in lactational amenorrhea. Malnutrition is known to affect the reproductive span by increasing the age of menarche, decreasing the age of menopause, and by inducing periods of amenorrhea. The mechanism by

which this occurs is unclear, though some have suggested that a minimal percentage of body weight as fat may be necessary to attain, restore and maintain menses.

Thus, similar nutrition-related mechanisms may be operating in delaying the onset of menarche and in prolonging postpartum amenorrhea. Because of the lack of accurate age data in Bangladesh, the average age of onset of menarche has not been described. The Matlab field area again provides an excellent base for such studies, since age of pre-menarchial girls can be accurately estimated.

In order to test the hypothesis that a critical body weight is needed to attain menses, anthropometric measurements should be related to the onset of menarche. The methodology will be similar to that used to correlate anthropometric measurements to the onset of menses postpartum.

Objectives

The nutritional factors affecting outcome of pregnancy, postpartum amenorrhea, infant deaths and reproductive life span may be similar. Thus, the exploration of all these phenomena within the same population would help elucidate significant variables, while controlling for extraneous factors that could be evident when comparing results from different countries. This study proposes to investigate the effect, if any, of nutritional status of the women of Matlab Thana, Bangladesh on their reproductive life span, fertility, and on infant death. The study will be divided into three components to

facilitate the investigation of the appropriate subtopics:

- (1) Birth interval dynamics and infant deaths in relation to the nutritional status of the mother;
- (2) Determinants of postpartum amenorrhea; and
- (3) Nutritional status and the onset of menarche.

The general objectives may be outlined as follows:

A. Birth Interval Dynamics

1. To assess the relationship between the nutritional status of the mother and:
 - a. The monthly probability of conception and average waiting time until conception;
 - b. The probability of a conception terminating in a live birth, stillbirth, or abortion and the average gestation time for each outcome;
 - c. The average length of lactational amenorrhea and postpartum sterility adjusted for her infant death experience;
 - d. The initiation of supplemental feedings for her infant.
2. To study the seasonality of conception as a function of:
 - a. The seasonal change in nutritional status of the mother;
 - b. The seasonal initiation of supplemental feedings for the infant.
3. To note differentials of infant death by nutritional status of the mother at various times during pregnancy.

4. To estimate differences in mean birth interval components as a function of morbidity of mothers.

B. Determinants of Post-Partum Amenorrhea

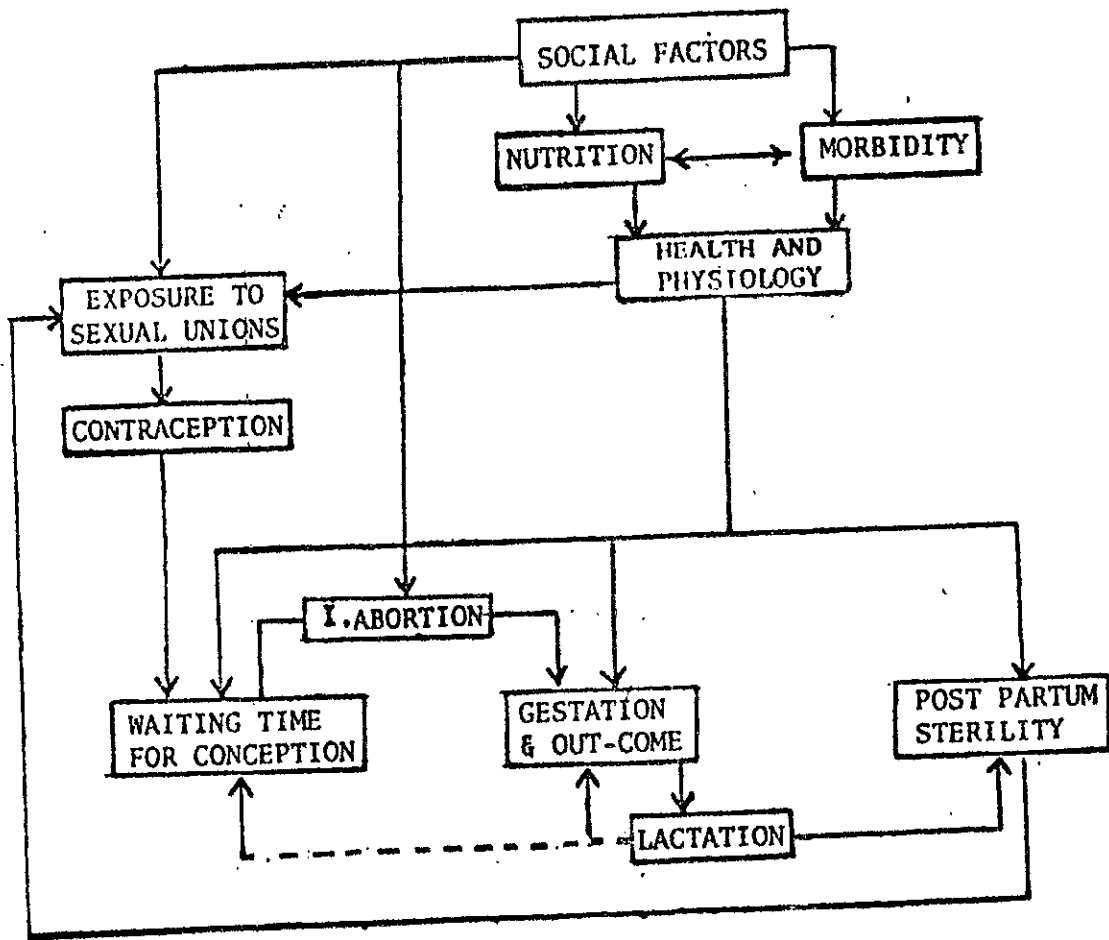
1. To investigate the relationship of lactational patterns, (frequency of nursing, and time expenditure involved nursing) to the duration of postpartum amenorrhea.
2. To investigate the relationship between maternal nutritional status to the duration of postpartum amenorrhea.

C. Onset of Menarche

1. To describe the relationship between age and onset of menarche.
2. To examine the relationship between nutritional status and the onset of menarche.

Methodology

The CRL has conducted biological and social research among the Matlab population since 1964. We believe our approach of acknowledgment of the opinion of community bodies, respect for the feelings of heads of household with regard to interviewing or treating female and minor family members, consideration for the rights of individuals and provision of free diarrheal disease treatment facility to anyone who requests it is the foundation of our excellent rapport with the Matlab population. We shall continue to work according to these well-established guidelines. In addition, we shall emphasize to everyone that this is a research project and their participation is strictly



MODEL: Effect of nutrition & morbidity on birth interval by socio-economic status.

voluntary. Volunteers may withdraw at any time from any part of the study, and availability of treatment at the Matlab hospital in no way depends on participation in this project.

A. Birth Interval Dynamics

A sample of approximately 2000 currently married women aged up to 49 will be selected from 14 villages in Matlab Bazar Thana and will be followed prospectively for 3 years. They will be interviewed once a month for 3 years and information regarding menstruation, conception, pregnancy, gestation, termination of pregnancy, post-partum amenorrhea, lactation, supplementary feeding practices, morbidity, and husband's absence will be recorded. Moreover, their finger tip blood will be collected for determination of hematocrit and serum protein levels. Their weight, height and arm circumference will be measured. Data on the mother's socio-economic status and pregnancy history will be obtained from an initial survey and from continuous population registers.

B. Determinants of Post-Partum Amenorrhea

Phase I - In order to obtain baseline information on the menstrual status and lactational patterns of the women in the study area, a survey will be conducted in 85 villages of Matlab Bazar Thana. A list of women who have given birth 3 to 18 months prior to the initiation of the study will be obtained through the birth registries. Field assistants will question these women as to their breastfeeding practice (full or partial), menstrual and pregnancy status, and use of contraception. Information on mother's age and parity, and sex of the index child will be obtained from the registry.

Phase II - A subgroup of women interviewed in the above study will be chosen to allow for a detailed comparison of women who are menstruating to those who are amenorrheic. To obtain sufficient numbers of women for comparison, women who are 11 to 18 months postpartum will be studied as this will include about 75% to 45% within each monthly post-partum group that are amenorrheic. This sample will include about 2000 women.

Since one would also be interested in learning why some women resume menses unusually early in this population, all breastfeeding women who resume menses among the 3-10 month group will also be studied in this phase. This will include less than 500 women.

In this cross-sectional survey, field workers will obtain:

- (1) Measurements of height and weight of both women and children;
- (2) Information on infant dietary supplementation;
- (3) Information on mother's dietary intake; and
- (4) Information on the mother's occupational activities.

Phase III - This phase of the study will be a detailed prospective follow-up of a subsample of amenorrhea women 11 to 18 months postpartum, aged 20-29, parity 2-3. About 200 women will be followed for 1 year. The data to be collected monthly will include maternal and infant anthropometric measurements; determination of lengths of breastfeedings and their daily frequency; incidence of disease for mothers and infant; occupational activities of mother; information on infant supplementation and maternal dietary intake.

C. Onset of Menarche

Initially all girls aged 10-16 residing in 3 of the 14 villages studied in part A will be interviewed to assess their true ages and whether they have reached menarche. Those girls aged 10-16 who have not reached menarche will be followed at monthly intervals for one year. Anthropometric measurements will be taken and the girls will be interviewed as to their menstrual status.

Staff

A. Birth Interval Dynamics

Mr. Alauddin Chowdhury, Head of Statistics of the CRL, will be in charge of the demographic, socio-economic and other technical aspects of field activities. Field staff will include 1 physician, 5 field assistants and 5 female field workers. One (1) Research Technician will perform laboratory tests for blood. Training of field staff will begin 1 month before actual field operation. A manual of field work will be developed at this time.

B. Determinants of Postpartum Amenorrhea

Sandra L. Huffman, visiting Population Intern from Johns Hopkins University at the CRL, will be in charge of this component of the study. Phase I will necessitate the use of 10 male field assistants, and 1 supervisor. Phase II will use 2 sanitary inspectors and 10 female field workers. Phase III will utilize 10 female field workers, 1 female supervisor, 2 male sanitary inspectors and 10 country boatmen/bearers.

Training for Phase III will begin 1 month prior to study initiation.

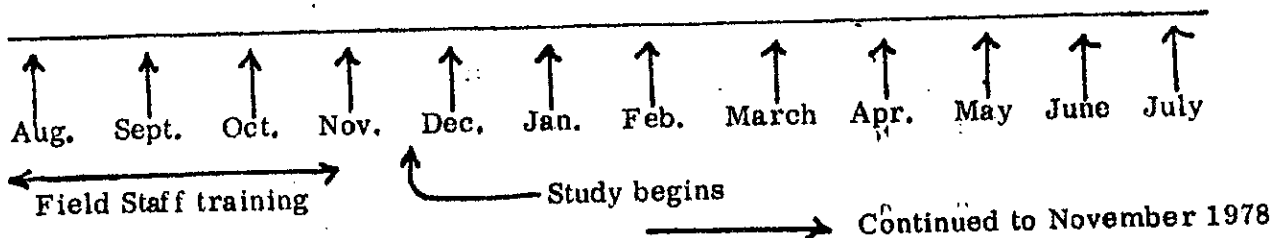
C. Onset of Menarche

Sandra Huffman will also be in charge for this study. 1 field assistant and 3 dais will be needed. A supervisor will be shared with part A.

Statistical staff will be coordinated for all components. 5 statistical assistants will be needed to edit, code and keypunch the data. One recorder will be needed in Matlab to maintain field records.

Work Plan

A. Birth Interval Dynamics

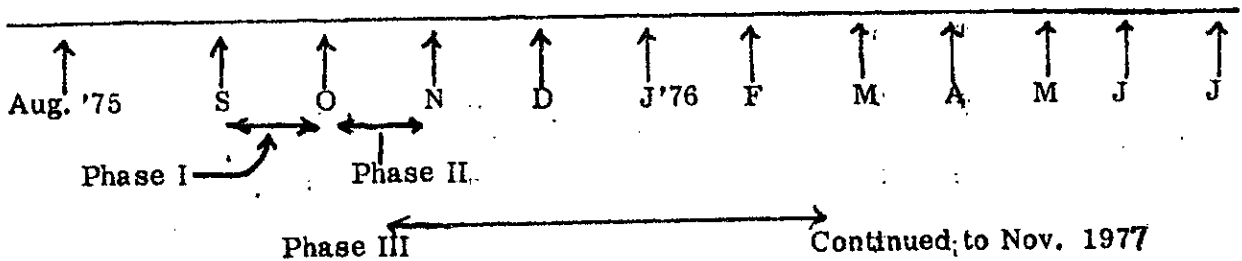


After selection of the sample village each currently married woman will be interviewed (Form-BID-1) for information about socio-economic status, pregnancy history and whether they are in reproductive phase or not. These data then will be checked with all vital event records existing since May, 1966. Any incorrect information will be corrected according to vital records. Women who are not in reproductive phase will be excluded. For each sample woman, a file will be opened with this filled BID-1 form. Approximate dates of subsequent 36 visits will be put on this file. These dates will be one month apart for the next three years. All the subsequent visits will be made according

to schedule and information collected on menses, conception, pregnancy, termination of pregnancy, postpartum amenorrhea, lactation, supplemental feeding to infants and infant deaths, with age, family planning practice, methods used and husband's absence recorded on standard forms. Weights will be taken and specimens of blood drawn. Form BID-2, used for the subsequent visits, will be filled up in duplicate in the field using a carbon. The original, along with blood specimens, will be sent to the laboratory for tests. When results are obtained, the BID-2 will be preserved in the original file. The carbon copy will be used by field visitors as a reference for their next visit.

Statistical assistants will make sure that BID-2 is complete and the schedule is being followed. They will consult the supervisor each week about completeness of field work and supply the list of cases running or expected to run beyond schedule and incompleting laboratory tests. They will also be responsible for continuous monitoring, evaluation and feedback of the day-to-day field work.

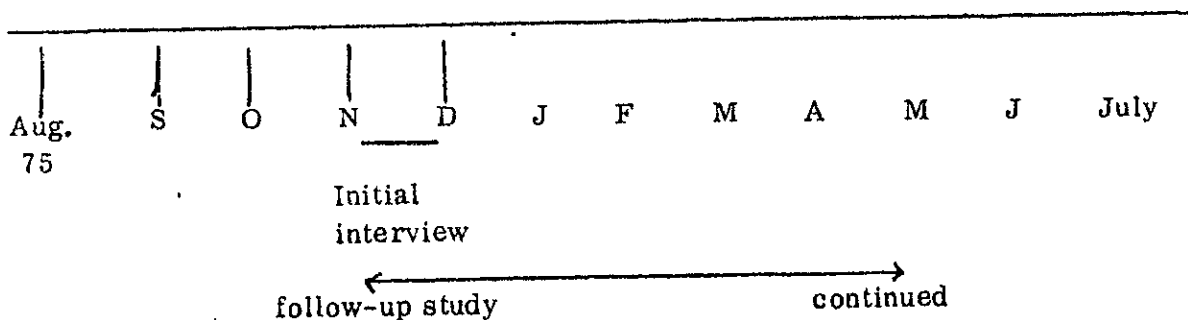
B. Determinants of Post-partum Amenorrhea



The information obtained in Phase I will be used to identify subjects

for phase II and III. Files for phase III subjects will be maintained by statistical staff. These will include growth charts for infants.

C. Onset of Menarche



Files will be kept on each subject including growth charts and demarcation of date on onset of menarche.

Analysis of Data

A. Birth Interval Dynamics

A progress report of the field work can be prepared at the end of the first year. Processing of data by IBM machine will start on the second year and at the end of the second and third years, progress reports will be prepared.

Final analysis, which will require computer analysis, will start when field work is finished. A simple descriptive report will be prepared 6 months after the end of field work. Mr. Alauddin Chowdhury will be responsible for the preparation of the Annual Progress Report.

B. Determinants of Post-partum Amenorrhea

A descriptive report derived from the information will be prepared

after cards have been punched, probably by January/February 1976. A report of Phase II will be made by June, 1976. The final report coordinating and analysing all data should be finished by ~~June~~ ^{Dec}, 1977.

C. Onset of Menarche

A progress report will be prepared within 6 months of the beginning of the study. A final report will be prepared by June 1977 by Ms. Huffman ^{and}

Alaudin Chowdhury

Significance of the Project

This project will provide a longitudinal study of birth interval dynamics in relation to various bio-social variables including nutrition and morbidity. With the inclusion of the eight last years registration data on births and deaths, and one years registration of marriage data, there will be a unique high-quality data base for an in-depth study of not only birth interval dynamics, but also other sophisticated population research. Moreover, the application of this knowledge will be helpful in defining some index of independent and inter-related variables affecting reproduction from which fertility reduction intervention measures can be designed for maximal acceptance.

The clarification of the determinants of postpartum amenorrhea has implications for both public health and clinical medicine. If a minimal nutritional status is found to be necessary to have menses occur, health planners could be made aware of the fact that improving the nutritional status of lactating women would lead to decreased periods of amenorrhea. This could

negatively affect the infants' nutritional status by shortening the birth interval and subsequently curtailing the period of lactation, unless other forms of protection against conception were provided.

If it is found that lactational patterns predominate in affecting lengths of amenorrhea, this information could be used to support the supplementation of mothers at least until the first 6 months postpartum. It would also be evident that if infants were to be supplemented after 6 months of age, the probable effect on the mother would be an earlier resumption of menses. Thus population planners would be aware of the subsequent need for the provision of contraception in order to prevent an increase in fertility.

The age of marriage is low in Bangladesh, and usually occurs once menarche has been reached. Factors affecting the onset of menarche can therefore directly influence the age of marriage and subsequent fertility by altering the female married reproductive span. Since nutritional status may affect the onset of menarche, changes in food supply could alter the age of menarche and subsequently cause changes in fertility. These dynamics have as yet not been described in Bangladesh, thus reasons for changes in fertility are purely speculative.

Name _____ Husband's name _____

Bari _____
 =====

VTS No. (1970) _____ Age _____

Education _____ Occupation _____

Husband's Education _____ Husband's occupation _____

Religion _____ Land _____

Total floor space _____ Height _____

Event	Age or Date of Event	Outcome of Pregnancy (only)	Is Child Surviving	
			Yes	No Date of Death

Present fecundity status _____

If event occurs after April 1966, date of event as well as age of woman are to be given.

Pregnancy out-come is to be classified spontaneous abortion, induced abortion, still-birth, live-birth male, livebirth female.

Events are marriage, divorce, widow, and pregnancy termination.

BIRTH INTERVAL DYNAMICS--2

VILLAGE _____ BARI _____
 NAME _____ CENSUS NO. _____
 PERIOD COVERED, FROM _____ TO _____

- | Event during the period Covered | Other details if + Yes | Code |
|---|---|------|
| 1. Menstruation ? No <input type="checkbox"/> DK <input type="checkbox"/> Yes <input type="checkbox"/> | _____ (Date, Days) | |
| 2. Pregnant ? No <input type="checkbox"/> DK <input type="checkbox"/> Yes <input type="checkbox"/> | _____ (Date, Days) | |
| 3. Preg. Termi ? No <input type="checkbox"/> DK <input type="checkbox"/> Yes <input type="checkbox"/> | _____ (LB, SB, MIS, Sex, Date) | |
| 4. Breast feeding? No <input type="checkbox"/> Yes <input type="checkbox"/> | _____ (Days, Date) | |
| 5. Supplementation? No <input type="checkbox"/> Yes <input type="checkbox"/> NA <input type="checkbox"/> | _____ (Days, Date, Type of Food) | |
| 6. Husband away? No <input type="checkbox"/> Yes <input type="checkbox"/> | _____ (Days, Date) | |
| 7. Practicing F.P.? No <input type="checkbox"/> NR <input type="checkbox"/> <input type="checkbox"/> Yes <input type="checkbox"/> | _____ (Days, Date, Method) | |
| 8. Illness? No <input type="checkbox"/> Yes <input type="checkbox"/> | _____ (Days, Symptoms) ^{YC?} /No/Yes/NR/ | |
| 9. Break-through Bleeding? No <input type="checkbox"/> Yes <input type="checkbox"/> NR <input type="checkbox"/> | _____ (Days, Date) | |
| 10. Husband illness? No <input type="checkbox"/> Yes <input type="checkbox"/> UK <input type="checkbox"/> | _____ ^{YC?} /No/Yes/NR/ | |
| 11. Child Death? No <input type="checkbox"/> Yes <input type="checkbox"/> | _____ (Sex, Date, Age or Date of Birth) | |
| 12. Absent? No <input type="checkbox"/> Yes <input type="checkbox"/> | _____ (With or without husband, days, date) | |
| 13. Changed M. status? No <input type="checkbox"/> Yes <input type="checkbox"/> | _____ (Kind, Date) | |

WT \bar{C} Infant _____

14. Wt. _____ Arm Circum _____
15. Blood sample collected Yes/ No/ Hct. _____ Protein _____
- Albumin _____ Globulin _____
16. Name of the worker _____ Date _____

POST PARTUM-AMENORRHEA STUDY

PHASE I CRL

Card # 1
(1)

MOTHER: VTS # _____ Census # _____ Name _____ Age _____
 1968 or 70 (6-13) 1974 (14-21) (22-23)

INFANT: VTS # _____ Date of Birth _____ Date of Death _____
 (24-31) (32-37) (38-43)
 Name _____ Age _____ Sex _____
 (44-45) (46-47)

No. living children _____ No. born alive now dead _____ Parity _____
 (48-49) (50) (51-52)

Date of Interview _____
 (53-58)

1) Are you presently breastfeeding the above infant? Yes _____ No _____ (59)
 If Yes: Do you feed it any other food, drink, or water? Yes _____ No _____ (60)
 Specify supplements given: _____ (61)
 If No: Why did you stop breastfeeding this infant? _____ (62)

When did you stop? _____ (63-64)

2) Was there another birth since the above? Yes _____ No _____
 If Yes: VTS # of infant _____ Date of birth _____ Date of death _____
 (24-31) (32-37) (38-43)

Name _____ Age _____ Sex _____
 (44-45) (46-47)

NLC _____ NBD _____ P _____
 (48-49) (50) (51-52)

Are you presently breastfeeding this infant? Yes _____ No _____ (59)
 If Yes: Do you feed it any other food drink or water? Yes _____ No _____ (60)
 Specify supplements given: _____
 If No: Why did you stop breastfeeding this infant? _____ (62)

When did you stop? _____ (63-64)

(If 1 and 2 are "No") Are you presently breastfeeding any other infant? Yes _____ No _____
 If Yes: VTS # of infant _____ Date of birth _____ Sex _____
 Circumstances _____

3) Have you menstruated since your latest child was born? Yes _____ No _____ (65)

If Yes: When did you start menstruating? _____ (66-67)

Are you now pregnant? Yes _____ No _____ Unknown _____ (68)

If Yes: How many months have you been pregnant? _____ (69)

4) Are you or your husband practicing contraception? Yes _____ No _____

If Yes: What type? _____ (70)

For how long?

POSTPARTUM AMENORRHEA STUDY
Phase II'

Card # 2

I.D. # _____

Mother: Name _____

Infant: Name _____

VTS # _____

VTS# _____

Age _____

Date of Birth _____

Parity _____

Date of Interview _____

Living children _____

* * * * *

1) Is the above infant alive? yes _____ no _____

If no: Date of Death _____

End Interview.

2) Have you menstruated since the birth of the above infant? yes _____ no _____

If yes: (a) When, in what month and year, did you first menstruate
after the birth of your baby?

Bangla: Month _____ Year _____

Western: Month _____ Year _____

If month unknown: How long ago did you start
menstruating? _____

(b) Do you menstruate regularly or irregularly each month?

regular _____ irregular _____

(c) How many times have you menstruated since the birth of your
last baby?

_____ times _____ unknown

(d) When was your last menses? _____

3) Are you now pregnant? yes _____ no _____ unknown _____

4) Are you presently breastfeeding your baby? yes _____ no _____

If no: Why did you stop? _____

When did you stop? _____

5) Yesterday, did you give your child any of the following foods:

1) Water _____

2) Cow's milk _____

3) Goat milk _____

4) Chini _____

5) Kola _____

6) Biscuit _____

7) Laban _____

8) Muri _____

9) Chira _____

10) Chaul bata _____

11) Mach _____

12) Barley _____

13) Sabu _____

14) Bhat _____

15) Dal _____

16) Gur _____

17) Shak _____

18) Fen _____

19) Pita _____

20) Suji _____

21) Atar Jau _____

22) Chauler jau _____
(Lota)

23) Chaul guri _____

24) Glaxo _____

25) Horlicks _____

26) Ata rooti _____

(6) Yesterday, what foods did you eat:

in the morning

in the afternoon

at night

(7) (a) What activities were you engaged in during the last month that took you outside your home? _____

(b) Were you engaged in any of the following activities?

- | | |
|-----------------------------------|--------------------------------|
| 1. rice thrashing _____ | 11. boil paddy _____ |
| 2. rice cleaning _____ | 12. dry paddy _____ |
| 3. rice husking _____ | 13. Soaking jute _____ |
| 4. gathering fuel _____ | 14. wash jute _____ |
| 5. preparing fuel _____ | 15. dry jute _____ |
| 6. making gur _____ | 16. clean jute _____ |
| 7. gardening _____ | 17. field work _____ |
| 8. housework for other _____ | 18. fishing _____ |
| 9. (staking) tending animal _____ | 19. picking dal _____ |
| 10. milk animal _____ | 20. picking mustard seed _____ |

(8) Did you eat any of the following foods yesterday?

- | | | |
|----------------------------|-----------------------|---------------------|
| 1. rice _____ | 26. Dal chana _____ | 31. Sweet Jau _____ |
| 2. chapati _____ | 17. Mash Kalai _____ | 32. Milk _____ |
| 3. loaf _____ | 18. Khashari _____ | 33. Matha _____ |
| 4. puri _____ | 19. Data _____ | 34. Chhana _____ |
| 5. dalpuri _____ | 20. Muri _____ | 35. Sarbat _____ |
| 6. watered rice _____ | 21. onions _____ | 36. water _____ |
| 7. Birani _____ | 22. Cha _____ | 37. Cut Fruit _____ |
| 8. Khichuri _____ | 23. Arum _____ | 38. Pitha _____ |
| 9. Plain jau _____ | 24. Chillies _____ | 39. Lachhi _____ |
| 10. Fish curry _____ | 25. Kola _____ | 40. Molasses _____ |
| 11. Beef curry _____ | 26. Coconut _____ | |
| 12. Mutton curry _____ | 27. Mustard Oil _____ | |
| 13. Cooked vegetable _____ | 28. Ghee _____ | |
| 14. Fried vegetable _____ | 29. Halua _____ | |
| 15. Dal Masur _____ | 30. Firni _____ | |

(9) Have you been sick during the last month? yes _____ no _____

If yes: (a) what did you have? _____

(b) How many days were you sick? _____

(c) How many days were you confined to bed? _____

10)

Have you or your husband used any method to keep you from becoming pregnant since your last baby was born? yes _____ no _____

(a)
If yes: what method did you use? _____

(b) when did you use it and for how long? _____

(c) Are you presently using any method? yes _____ no _____

11) Did you fast at all during Ramzan? yes _____ no _____

If yes: How many days did you fast? _____

12) Mother: Height _____

Weight _____

Arm Circumference _____

13) Infant: Height: _____

Weight: _____

Arm Circumference _____

Interviewer

POSTPARTUM AMENORRHEA STUDY

Phase III

CRL

Card # _____ Date of Interview _____ I. D. # _____

MOTHER: Name _____ INFANT: Name _____

Weight _____ Weight _____

Arm Circumference _____ Arm Circumference _____

FOOD

Time	Breastfeeding Min.	Supplementation
------	-----------------------	-----------------

8:00		
8:30		
9:00		
9:30		
10:00		
10:30		
11:00		
11:30		
12:00		
12:30		
1:00		
1:30		
2:00		
2:30		
3:00		
3:30		
4:00		

Total # of feedings _____ Total feeding time _____

BUDGET SUMMARY
1976-77 & 1977-78
DNE

Budget Categories	1977		1978		TOTAL	
	Tk.	₹	Tk.	₹	Tk.	₹
1 PERSONNEL SERVICES	213,538	-	185,119	-	398,657	-
2 SUPPLIES & MATERIALS	4,000	-	2,600	-	6,600	-
3 EQUIPMENT	4,000	-	-	-	4,000	-
4 CRL TRANSPORT	90,001	-	89,999	-	180,000	-
5 TRAVEL & TRANSPORTATION OF PERSONS	42,669	2,500	42,331	2,500	85,000	5,000
6 TRANSPORTATION OF THINGS	1,000	-	1,000	700	2,000	700
7 RENT, COMMUNICATION & UTILITIES	10,300	-	5,700	-	16,000	-
8 PRINTING & REPRODUCTION	3,380	-	13,620	-	17,000	-
9 OTHER CONTRACTUAL SERVICES	82,700	-	42,900	-	125,600	-
TOTAL	<u>451,588</u>	<u>2,500</u>	<u>383,269</u>	<u>3,200</u>	<u>834,857</u>	<u>5,700</u>

PERSONNEL SERVICES

BUDGET 1976-77 AND 1977-78

D.N.F.
73 08 04

Sl. No.	Name	Position	No. of Staff	Grade & Step	Salary with 54% Fringe Benefit	Annual Salary	Proportionate Time	Number of months	1975-76 Expenditure	Amount Required		Total of 11 + 12 Upto end of the Project	Remarks if any
										1977	1978		
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Mr. AKM Alauddin Chowdhury	Investigator	1	C-12	5,359	64,308	50%	24	-	32,154	32,154	64,308	
2	Mr. J. Chakraborty	Field Supervisor	1	F-5	2,569	30,828	20%	24	-	6,166	6,415	12,581	
3	Physician	Physician	1	F-2	2,257	27,084	50%	24	-	13,542	14,166	27,708	
4	Sanitary Inspector	S.I.	2	I-4	@1,357	32,568	100%	6	-	16,284	-	16,284	
5	Female Supervisor	F.S.	1	J-1	962	11,544	100%	24	-	11,544	12,216	23,760	
6	Female Worker	F.W.	6	K-2	@858	61,776	100%	6	-	30,888	-	30,888	
7	Female Worker	F.W.	9	K-2	@858	92,664	100%	24	-	92,664	97,848	190,512	
8	Key Punch Operator		2	K-3	@ 906	21,774	100%	6	-	-	11,448	11,448	
9	Clerk		1	K-2	858	10,296	100%	24	-	10,296	10,872	21,168	
									\$17,065.46				
								@14.50	247,449	213,538	185,119	398,657	

BUDGET 1976-77 AND 1977-78

D.N.F.
73 08 04

SUPPLIES & MATERIALS

Sl. No.	Name of Items	Quantity in 1977	Quantity in 1978	Cost in 1977	Cost in 1978	Total Cost	1975-76 Experience
1	General Office Supplies	-	-	3,000	2,000	5,000	
2	IBM Cards	20,000	20,000	200	300	500	
3	Cotton Tape	20	-	100	-	100	
4	Other Supplies	-	-	700	300	1,000	
							\$ 3,308.96 @ 14.50
				4,000	2,600	6,600	Tk. 47,979.92

Last Year :

Drugs	\$547.84
Glassware	569.08
Hospital Supplies	142.92
Office Supplies	707.36
Materials for Uniform	3.07
Materials for Hospital Linen	32.23
Maintenance Supplies	108.40
Janitorial Supplies	878.79
Miscellaneous	<u>319.27</u>

\$3,308.96 @ Tk. 14.50 = Tk. 47,979.92

BUDGET 1976-77 AND 1977-78

D.N.E.
73 08 04

RENT, COMMUNICATION & UTILITIES

Description and calculation	Amount in 1977 Tk.	Amount in 1978 Tk.	Total Amount Tk.	1976 Experience
(a) Rent: Rental of office accommodation @ Tk. 300 per month x 36 months (24 + 12)	7,200	3,600	10,800	\$298.52 @ Tk. 14.5
(b) Communication Cables approx - 1,200 Letters " - 500 Phone " - <u>500</u>	1,100	1,100	2,200	Tk. 4,329 for one year
(c) Utilities: Maintenance of office and other 2,000 + 1,000	2,000	1,000	3,000	
	10,300	5,700	16,000	

BUDGET 1976-77 AND 1977-78

D.N.F.
73 08 04

PRINTING & REPRODUCTION

Description & calculations	Amount in 1977 Tk.	Amount in 1978 Tk.	Total Amount Tk.	1976 Experience
(a) Printing of forms (60,000 - 30,000) = 30,000 forms @ 15,000 per year Tk. 3,000	1,500	1,500	3,000	\$560.91 @ Tk. 14.5
(b) Mimeographing of forms, sheets 4,000 + 4,000 = 8,000 sheets @ 0.20 each = Tk. 1	800	800	1,600	Tk. 8,133
(c) Xeroxing of forms, letter, etc. say 2,000 copies @ 1.08 each Tk. 2,160	1,080	1,080	2,160	
(d) Printing final report (Publication)	-	10,240	10,240	
	3,380	13,620	17,000	

BUDGET 1976-77 AND 1977-78

D.N.F.

73 08 04

OTHER CONTRACTUAL SERVICES

Description & calculation	Amount in 1977 Tk.	Amount in 1978 Tk.	Total Amount Tk.	1976 Experience
(a) Ferry Toll Charges	700	700	1,400	₹365.76 @ Tk. 14.5
(b) Food/Camp allowance, etc.	200	200	400	
(c) Wages of labourers (might come)	500	700	1,200	Tk. 5,304
(d) Laboratory & Office equipment repair, etc.	300	300	600	
(e) Other unclassified expenses	1,000	1,000	2,000	
(f) Computer time, etc.	80,000	40,000	120,000	
	82,700	42,900	125,600	

কম্পিউটার সফটওয়্যার
মালিক ও গণিত মাসিক
সংস্করণের জন্য উৎসর্গিত
-----X-----

স্বাক্ষরিত

মালিক, গণিত মাসিক এবং কম্পিউটার সফটওয়্যার
বিষয়ে উৎস সংগ্রহের জন্য মাসিকের মালিককে / মালিককে কতকগুলি
প্রয়োজনীয় প্রশ্ন জিজ্ঞাসা করা হবে।

মালিকের মত থাকিলে নীচে স্বাক্ষর করুন।

স্বাক্ষরিত
স্বাক্ষরিত

উৎস মালিক / মালিকের নাম

স্বাক্ষরিত মালিকের নাম
উৎস মালিক মালিক