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IN THE MATLAB AREA OF BANGLADESH

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PREFACE

The International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) is an autonomous, international, philanthropic and non-profit centre for research, education and training as well as clinical service. The Centre is derived from the Cholera Research Laboratory (CRL). The activities of the institution are to undertake and promote study, research and dissemination of knowledge in diarrhoeal diseases and directly related subjects of nutrition and fertility with a view to develop improved methods of health care and for the prevention and control of diarrhoeal diseases and improvement of public health programmes with special relevance to developing countries. ICDDR,B issues two types of papers: scientific reports and working papers which demonstrate the type of research activity currently in progress at ICDDR,B. The views expressed in these papers are those of authors and do not necessarily represent views of International Centre for Diarrhoeal Disease Research, Bangladesh. They should not be quoted without the permission of the authors.

ABSTRACT

A pilot study of the calendar rhythm method was done in one village in Matlab. The cycle lengths of these women had been recorded for several years in the "Determinants of Natural Fertility" prospective study. Of 36 women who were initially interested in the method and were given education on reproduction, 11 were not motivated to continue further. Of the 25 remaining women 10 had husband's who objected to the method. Of the 15 remaining women, 5 had irregular cycles so the method could not be used. Of the 10 remaining women, 5 were in postpartum amenorrhea so could not start using the methods. The five remaining women had individual calendars prepared for them, and were guided in its use during two months. However, within 16 months of acceptance of the method, four of these five women had become pregnant. The problems encountered with the calendar rhythm method in this one village are very likely to be common to other rural areas of Bangladesh.

INTRODUCTION

The rhythm methods of birth control are based on the fact that conception only occurs during a short span of time after ovulation. Since both, a viable sperm and egg are required for conception, an estimate of the duration of life of sperm in the female reproductive tract and an estimate of the duration of life of the ovum after ovulation, an unsafe period for sexual intercourse before and after the day of ovulation can be determined, and if abstinence is practised during these days, conception can be prevented. Unfortunately ovulation cannot be observed directly, so it also must be estimated.

In the calendar rhythm method, the time of ovulation is estimated as between 12 and 16 days before the beginning of the next menstrual flow. This is known to be quite accurate. Records of the cycle lengths of women are required: the largest and shortest cycle lengths for a woman are used to estimate the earliest and latest possible days that ovulation could occur in any given cycle. Combining this with an estimate of 3-5 days for the life of sperm in the female reproductive tract and 1-2 days for life of the ovum, and interval of unsafe days for the woman is obtained (1, 2, 3). (For this study the first and last unsafe days were estimated by L-10 and S-21 respectively where L and S represent the longest and shortest cycle lengths.) Obviously the length of the unsafe period for a woman depends on the difference between her longest and shortest cycles.

In the 1950's a large scale experiment of the calendar rhythm method was carried out in India (4), in a rural and an urban setting. In both areas, though a majority of the couples

wished to control their fertility; the practice of the method was a failure. In the rural area in Mysore, among 811 couples who expressed a willingness to learn a method of birth control, only 112 (14%) could be taught. The remaining women either (a) were pregnant or not menstruating due to illness or lactational amenorrhea (49%), (b) changed their mind and became unwilling to learn the method (12%), (c) had cycles with too great a variation in length to be suitable for the method (17%) or (d) moved out or were separated from their husbands (9%). Among the 112 couples who were taught the method, 71 followed the method irregularly or abandoned it altogether leaving only 41 women (5% of the original 811) followed the method regularly. One conclusion was clear: the calendar rhythm method could not be expected to produce a substantial decline in fertility.

Potential for calendar rhythm in Matlab: Rationale for the study:

Since 1975, as part of a study of the determinants of natural fertility (DNF) in a research project of the ICDDR,B in Dacca, Bangladesh, 2000 women in 14 villages in Matlab Thana were asked questions monthly about their reproductive status. Among the information gathered were data on menstrual cycles of the women. Though ICDDR,B has offered family planning services in other villages in the Thana, in these study villages only Government family planning services are available. Practice of modern methods of birth control was estimated at 3% in 1977.

The rationale for a study of the rhythm method in this population were: (a) the information needed to construct individual calendars were already available, (b) in the absence of modern contraception in these villages, the rhythm method would

be a natural service to provide for interested women, especially since - after four years of interviews - the women are somewhat familiar with their cycles. The objective of the study was to determine to what extent the method could be taught, accepted and used among women in rural Bangladesh.

Field methods:

One village with 350 families was selected for a pretest of the method. The literature on the method was studied and ideas were collected on the most appropriate form for the calendar. Since cycle lengths vary both between women and within women, and the vast majority of the village women are illiterate, the design of a calendar for the project was a challenge. In addition, ideas on the best format for and substance of the reproductive and rhythm education were developed.

The actual process of work in the village is shown in the flow chart of Figure 1. In each bari an educated and/or interested woman was selected for the study. This woman answered a short questionnaire (Form 4A, Appendix 1) regarding her reproductive status and simple knowledge of human reproduction and then was given brief reproductive education and an explanation of the rhythm method. After one or two weeks we returned and gave the women a short test to determine if she had retained the knowledge given in the last session (Form 4B, Appendix 1). If not, the education was repeated. If the woman had learned the basic reproductive information and was motivated to use the rhythm method, an appointment was made to meet the husband and wife together.

In the interview (Form 4C, Appendix 1) with both spouses,

the method was explained to the husband, in particular the fact that the husband would need to abstain, practice withdrawal, or use the condom on unsafe days. If the husband was also motivated to try the method, the details of the woman's cycle lengths were obtained from the DNF interview sheets. In cases where the women's cycles were very irregular it was necessary to inform the woman that the method could not be used. For the remaining women, the longest and shortest cycle lengths and the unsafe days were determined.

The calendar:

Figure 2 shows the standard rhythm calendar. Circular in design and printed on hardboard, it is divided into 46 sections corresponding to cycle days to allow for the few women with very long cycles and the occasional long cycle of many women. Twenty sections are sketched, since virtually all women have regular cycle lengths of at least twenty days. A pointer secured to the center can be moved manually to mark the passing days. A hole in the board makes it easy to hang out of the reach of children in the households.

From this standard, the calendar for each woman was constructed. As many segments as correspond to the woman's longest cycle were sketched and numbered. Then the first three, four or five days are coloured red to indicate menstrual flow and the unsafe days are coloured blue (or green). The woman was instructed to move the pointer each day, abstain or use condom or withdrawal during days coloured blue (or green), and with the first day of the next menstrual flow, move the pointer ahead to day one.

RESULTS

Of the 36 women in the village who were contacted and given education, 25 were motivated to use calendar rhythm. Among these 25 women, 15 had husbands who were also motivated. Among the 15 couples, five menstruating women received the calendars, five could not use the method due to irregular menstruation and five women were in postpartum amenorrhea. The demographic characteristics of the women and couples in the several groups are compared in Table 1.

Because the sizes of the groups are so small, statistically significant differences were not detected. Nevertheless, the observed patterns deserve comment. Motivated women are slightly younger than non-motivated women but have older husbands. Motivated women also have a higher educational level, and slightly fewer children than non-motivated women. According to an indicator of income - size of the dwelling^a - motivated women are better off than their non-motivated neighbors. Among the motivated women, comparing women with motivated husbands with couples in which the husband was not motivated we see that:

1. Wives and husbands in motivated couples are both older and have more living children than - non-motivated couples.
2. The wives with motivated husbands are more educated than the wives with non-motivated husbands.

^aThis variable has been found to be highly correlated with income in Matlab (Islam and G. Curlin, unpublished report).

3. Motivated couples have considerably more-dwelling space than non-motivated couples. This difference persists even after accounting for the larger families of motivated couples by considering per capita dwelling space.

The responses of the women to the questions on reproductive education in the first interview are shown in Table 2 for the several groups. It can be seen that knowledge of the reproductive process among these village women was very meagre. Knowledge of the approximate timing of ovulation and conception within the menstrual cycle was virtually absent. Only 15% of the women responded that both male and female "seeds" are needed for a baby to begin. Though the 25 women who responded "no idea" to this question indeed have some ideas about the formation of a baby, their response was out of shyness and a feeling that what they think is wrong. The distribution of the other two responses is not encouraging. On the other hand, nearly half of the women knew about tubectomy.

Regarding differentials between the groups, from a comparison of columns 4 and 6 of Table 2, it can be seen that knowledge of the reproductive process was higher among the women who were later identified as motivated.

Of the five menstruating women who received the calendars, one was unable to utilize it. When this woman received the calendar she was expecting her menses after which she would begin using the calendar. However the menses never came - she was pregnant. The four remaining women have used the method successfully to avoid pregnancy for a total of twenty woman-months.

By the time of the publication of this report (16 months after the start of the project) three of these four women had discontinued and became pregnant. It should be noted that the worker was withdrawn from this work after three months. So the women received no outside support for use of the method after this time.

DISCUSSION

The rhythm method is attractive for Bangladesh because it is a natural method of birth control that requires no imported technology. It also has no side effects.

But two aspects of the reproductive status of rural Bangladesh women make introduction of the rhythm method problematic. First, a typical woman spends only a small proportion of her reproductive life span in the menstruating state. From other data for the same study area, (Chen et al. 1974) the estimate of this proportion is 24% or 8 menstrual cycles in an average birth interval of 34 months. The remaining time a woman is pregnant or in lactational amenorrhea.

The second aspect, related to the first, is that the menstrual cycles of many women are very irregular. The first few cycles after resumption of menstruation post-partum are often irregular. Among the 15 motivated couples, 5 of the women could not be given a calendar because their cycles were very irregular.

Another problem is presented by the low level of education of the women. The use of calendar rhythm requires concepts of

counting, planning etc. which are more developed among educated persons. These concepts are also almost totally lacking in the area of sexual behaviour. Even among many of the motivated women there was little or no interest in the reproductive education; they only wanted to know how to practice the method.

Problems also arose out of the husband's dislike of the method. The calendar rhythm method requires cooperation between the partners. Abstinence, condom and withdrawal during the unsafe days were all unacceptable to some men. In addition there was a dislike of the idea of "programmed sex".

Though the small sample does not permit firm conclusions we can nevertheless infer that, as in the case of India, there may be considerable obstacles to the successful largescale use of the rhythm method in Bangladesh.

TABLE 1

SELECTED SOCIO-DEMOGRAPHIC CHARACTERISTICS OF WOMEN AND COUPLES CONTACTED FOR REPRODUCTIVE EDUCATION AND THE CALENDAR RHYTHM METHOD IN ONE MATLAB VILLAGE ACCORDING TO FINAL MOTIVATIONAL STATUS

Characteristic and Category	Group of Women/Couples				
	All Contacted Women	Non-Motivated Women	Motivated Women	Non-Motivated Couples ^a	Motivated Couples ^a
<u>Age of Wife</u>					
All ages	36	11	25	10	15
<25	10	3	7	2	5
25-34	15	4	11	7	4
35 & above	11	4	7	1	6
Mean	29.5	30.3	29.1	27.4	30.2
<u>Age of Husband</u>					
All ages	36	11	25	10	15
<30	6	2	4	1	3
30-39	14	4	10	4	6
40 & above	16	5	11	5	6
Mean	40.6	39.5	41.0	39.8	41.9
<u>Formal Education of Wife</u>					
All levels	36	10	25	10	15
None	19	8	11	5	6
1-3 years	6	2	3	1	2
4 & above years	11	-	11	4	7
Mean	2.0	.6	2.5	2.3	2.7
<u>Number of Living Children</u>					
All numbers	36	11	25	10	15
1-2	12	3	9	3	6
3-4	11	3	8	6	2
5 & above	13	5	8	1	7
Mean	4.2	4.5	4.0	3.4	4.5
<u>Size of Dwelling (in sq. feet)</u>					
All sizes	36	11	25	10	15
<300	21	9	12	6	6
>300	12	1	11	3	8
Not available	3	1	2	1	1
Mean	304	237	333	264	377

^a The motivated women were grouped in either motivated couples or non-motivated couples according to the motivation of the husband (see Figure 2).

TABLE 2

RESPONSES OF WOMEN IN ONE MATLAB VILLAGE TO QUESTIONS ON REPRODUCTIVE KNOWLEDGE BY FINAL MOTIVATIONAL STATUS IN RHYTHM EDUCATION PROJECT

Question and Responses given	Group of Women/Couples								
	All Contacted Women		Non-Motivated Women		Motivated Women		Non-Motivated Couples		Motivated Couples
	No.	%	No.	%	No.	%	No.	No.	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
How is baby begun?									
Only male seeds	6	17	1	9	5	19	3	2	
Both sexes contribute	5	14	1	9	4	15	2	2	
No idea	25	69	9	82	16	62	10	6	
During the menstrual cycle when does conception occur ^a ?									
Not correct	20	56	8	73	12	46	11	1	
Partly correct	15	42	3	27	12	46	4	8	
Correct	1	3	0	-	1	1	0	1	
What can a couple do to be 100% sure the wife will not get pregnant?									
No method	9	25	4	36	5	19	4	1	
Tubectomy	15	42	3	27	12	46	6	6	
No idea	12	33	4	36	8	31	5	3	

^a These responses to the question which were in reference to a 30-day cycle were categorized as follows:

- Not correct:
 - "after 14 days of a cycle"
 - "3-7 days after menstrual period"
 - "at any time"
 - "no idea"
 - "after menstrual period within 7-15 days"
- Partially correct:
 - from the onset of a cycle within 14-15 days
 - from the onset of a cycle within 21 days
- Correct:
 - 11th to 20th days

FIGURE 1

PROCESS OF WORK FOR REPRODUCTIVE AND RHYTHM EDUCATION PROJECT

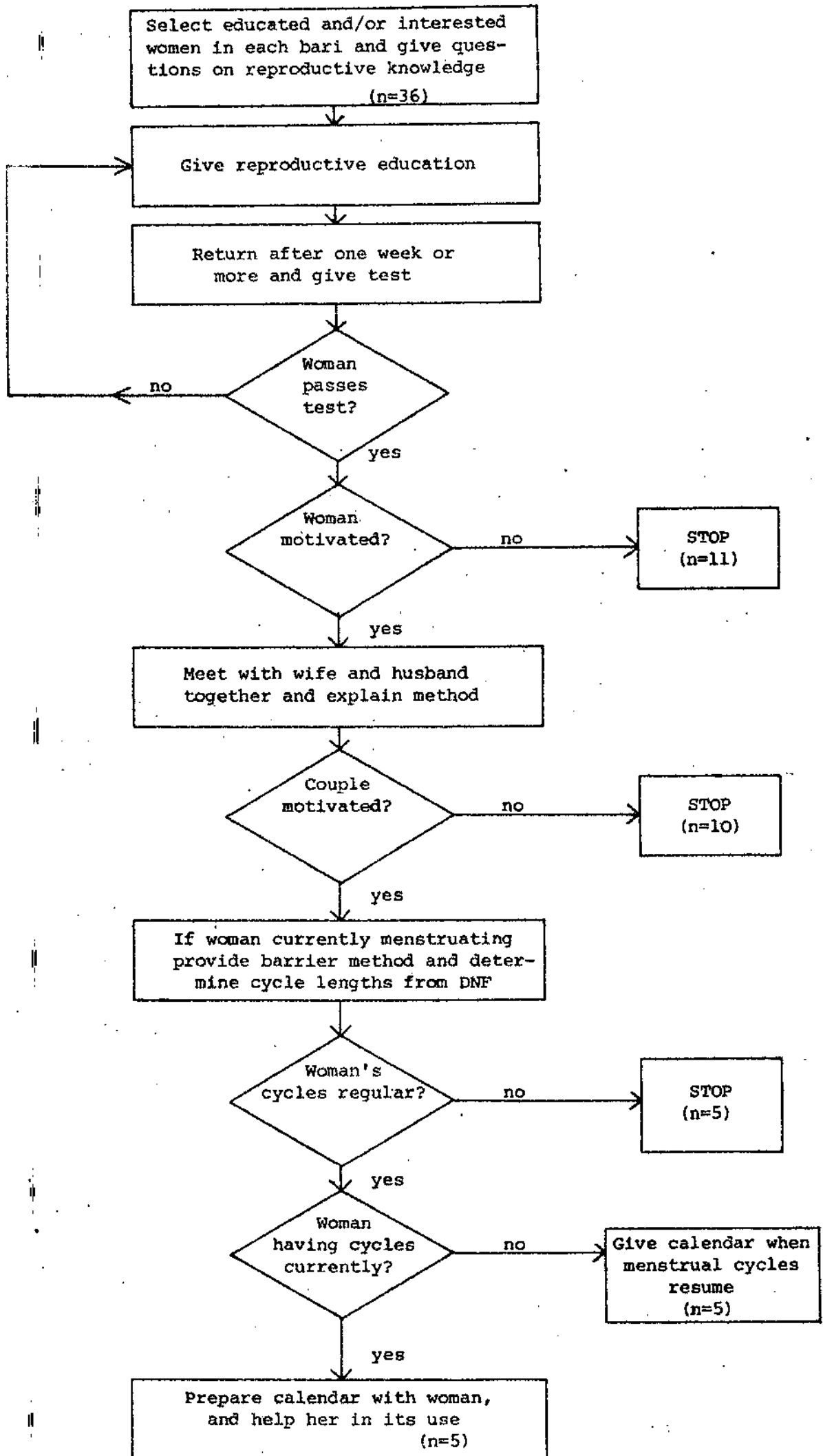
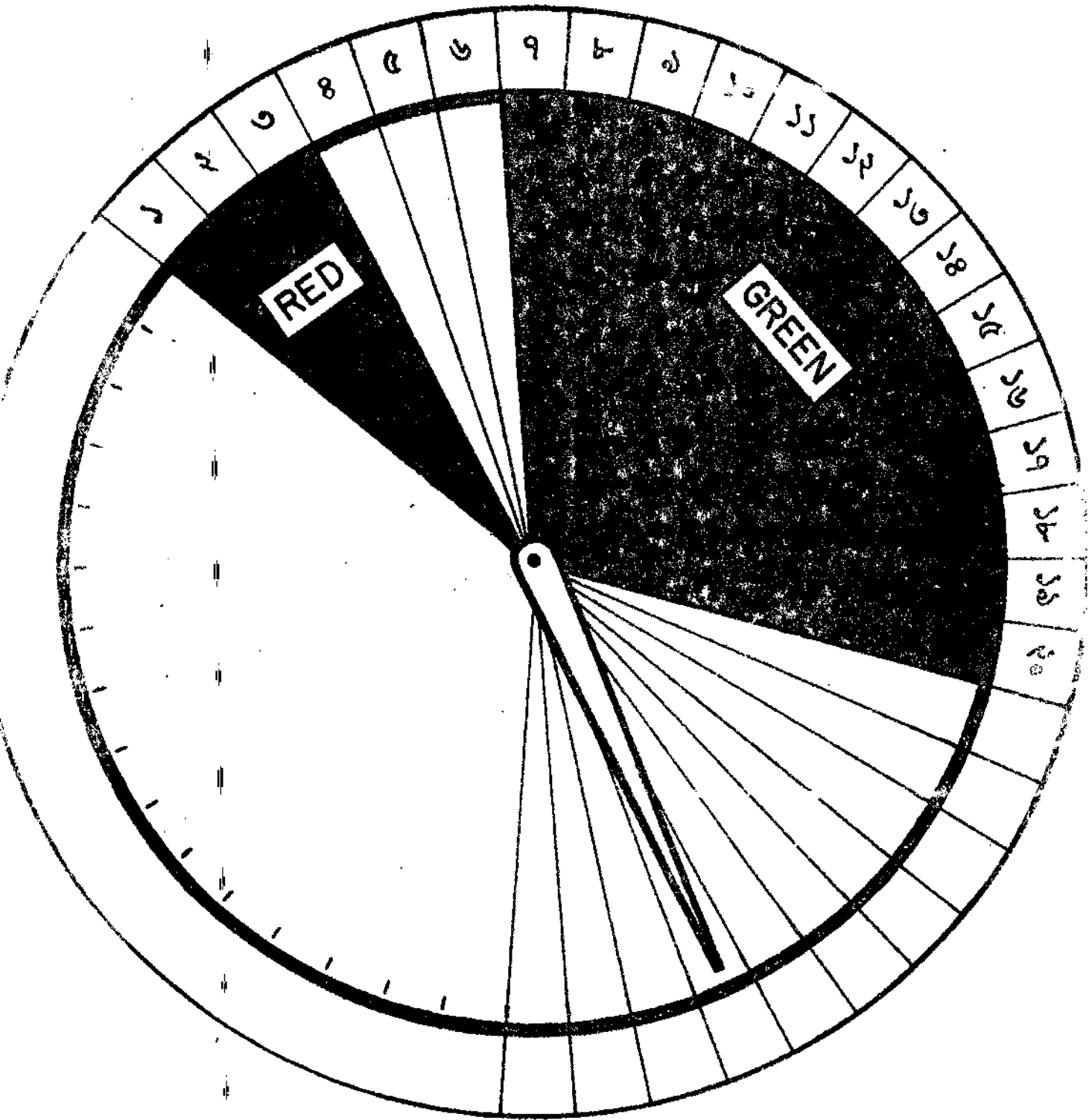


Fig. 2. Photograph of a rhythm calendar used in the Pilot Project



Appendix 1: Interview Forms

BID 4A

KAF AND REPRODUCTIVE EDUCATION

Village _____ Husband's Name _____
Name _____ Census Number _____
Bari _____ Date of interview _____

1. Age _____
2. Number of living children _____
3. Date of last pregnancy termination _____
4. Reproduction status _____
5. Cycle length _____
6. Vaginal infection _____
7. Previous use of family planning _____
If yes, which kind _____
when _____
8. Knowledge
 - a. How is a baby begun? _____
 - b. During menstrual cycle when does conception occur _____
 - c. If a couple does not want a baby, what can they do to be 100% sure she will not become pregnant? _____
 - d. During your cycle what kind of cervical mucous is there? _____
9. Comments about motivation etc.

BID 4B

REPRODUCTIVE EDUCATION EVALUATION

Village _____

Census Number _____

Name _____

Name of educator _____

1. Reproduction status _____
2. Test of reproductive knowledge
 - a. How many days does egg live? _____
 - b. How many days does sperm live inside the woman after intercourse? _____
 - c. When in the cycle does ovulation occur? _____
 - d. What part of cycle is your Spinn formed? _____
 - e. If a woman has a cycle of 30 days, which days are unsafe for unprotected intercourse and which days are safe?

 - f. Why does the condom prevent conception? _____
3. Date of meet with husband _____
4. Comments on motivation etc.

BID 4C

MEETING WITH MOTIVATED COUPLE

Village _____

Name _____

Census number _____

Date of interview _____

-
1. Reproductive status _____
 2. Calendar given? _____
 3. Use abstinence, withdrawal or condom during unsafe days _____
If condom, how many given? _____
 4. Cycle day _____
 5. Comments (motivation and contribution of wife in discussion,
husband-wife communication, etc.)

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