Married Adolescent Girls Programme

Baseline End Line Comparison - Rural

Introduction

A large number of adolescent girls in Maharashtra get married before the legal age of 18 years. Early marriage and motherhood are associated with adverse reproductive health outcomes. This target group has special needs that are not addressed by the formal health system. The Institute of Health Management, Pachod (IHMP) undertook a three-year intervention research project, which addresses the health needs of Married Adolescent Girls (MAGs). The project assumes specific policy significance for Maharashtra since the age group 15-19 years contributes significantly (27 percent) to the state's fertility.

Project Objectives

The project was implemented for young married women with a focus on adolescent girls below 20 years of age in a rural setting in Aurangabad District. The project was designed from a health systems perspective to develop a package of health services for married adolescent girls. The following are the project objectives:

- Broad Objective

Improve the sexual and reproductive health of married adolescent girls in 50 villages over the next 3 years.

- Specific Objectives

1. Reduce the prevalence of anaemia among married adolescent girls by 20 percentage points.
2. Increase the proportion of treatment seeking behaviour for post-abortion complications by 20 percentage points.
3. Delay the average age at first conception by one year.
4. Reduce the proportion of low birth weight babies by five percentage points
5. Increase treatment seeking for RTIs among married adolescents by 20 percentage points.

6. Increase treatment seeking for post-natal complications in married adolescents by 20 percentage points.
7. Increase husbands taking their wives for treatment by 15 percentage points.
8. Increase husbands helping in child rearing and household work by 15 percentage points.

Project Interventions

The project interventions for creating a demand for services and generating behavioural change at the individual and household levels were divided into four broad areas

- Surveillance for assessing needs on a monthly basis
- Primary level health care
- Behaviour Change Communication (BCC)
- Engaging parents and communities

Evaluation Methodology

From October to December 2002 a census survey was conducted in 48 villages of Paithan Taluka for a population of about 60,000. In this population, married adolescent girls in the age group 13 – 19 years were listed. There were a total of 824 married adolescent girls in the project area in December 2002.

A detailed interview schedule was prepared and pre-tested and samples of 400 girls out of 824 married adolescent girls selected using systematic sampling procedures and were interviewed in May, June and July of 2003.

From January 2003 onwards, all newly married adolescent girls continued to enrol in this project. Married adolescent girls who had enrolled up to December 2004 were included in the sampling frame for the end line survey as it was felt that they would have had adequate exposure to the interventions. By December 2004, the total number of married adolescent girls that had been enrolled in this programme was 1616. Out of this sampling frame, a random sample of 300 young married women was selected for the end line survey that was conducted in March, April and May of 2006.

The report compares baseline survey data for the MAGs project collected in 2003 with the end line survey data collected in May 2006 as well as with data collected for control area in 2007.

In the same population, an earlier survey was conducted in 1999-2000. At that time 1609 married women between the ages of 13 and 49 years were interviewed. Out of these, 117 were married adolescent girls in the age group 13 to 19 years. From 2000 to 2003 an RCH programme was implemented for all the women between the ages of 13 and 49 years. A focused programme for married adolescent girls (MAGs) was introduced in 2003.

Background Characteristics

The sample of MAGs at baseline and control was compared with that at the end line on the following socio-demographic characteristics. It was found that there is equivalence in most socio-demographic background characteristics of the respondents at base line, end line and control.

Table: Background Characteristics

Sr. No.	Variable	Category	Baseline (N=400) (Percent)	End line (N=300) (Percent)	Control area (N=400) (percent)
1	Level of Education	No education	27.5	21.7	17.0
		Primary	17.5	11.3	11.8
		Middle	29.0	39.3	38.3
		Secondary	22.0	21.0	27.0
		Higher secondary +	04.0	06.7	6.0
2	Occupation of the Respondent	Working	80.0	81.7	80.5
		Non-working	20.0	18.3	19.5
3	Husband's Level of Education	No education	15.3	12.3	13.5
		Up to Middle	22.3	22.7	25.3
		High School	36.0	38.0	40.8
		Secondary +	26.4	27.0	20.5

Sr. No.	Variable	Category	Baseline (N=400) (Percent)	End line (N=300) (Percent)	Control area (N=400) (percent)
4	Husband's Occupation	Labourer	06.5	05.7	7.0
		Agri. Labourer	20.7	20.0	13.3
		Farmer	49.0	53.3	57.3
		Business	10.3	10.0	7.8
		Service	05.3	03.7	5.0
		Driver	06.5	07.3	6.3
		Others	01.7	0.0	3.5
5	Total Number of Family Members	<= 5	39.5	40.0	48.5
		6+	60.5	60.0	51.5
6	Type of Family	Nuclear	11.0	19.3	14.5
		Joint	89.0	80.7	85.5
7	Living with Mother-in-law	Yes	85.5	78.3	86.0
		No	14.5	21.7	14.0
8	Religion	Hindu	81.0	84.7	85.8
		Muslim	09.0	10.0	9.0
		Christian	0.8	0.7	1.3
		Buddhist	09.3	4.0	4.0

1. Age at Marriage and Age at First Conception

Review of the literature indicates that married adolescents experience a higher proportion of maternal morbidity and mortality as a result of early marriage and conception. The broad objective of this programme was ==to delay age at marriage and first conception==. When this research intervention was undertaken, it was assumed that a delay in age at marriage and first conception would result in a reduction in maternal morbidity and mortality.

Age at Marriage

The age at marriage of respondents was validated by asking married adolescent girls questions with regard to age at menarche, interval between age at menarche and age at marriage, etc. Data on age at marriage were collected from 400 girls at the time of the baseline survey, and from 412 ever conceived girls who were enrolled in the programme from January 2003 to December 2004, at the time of the end line survey.
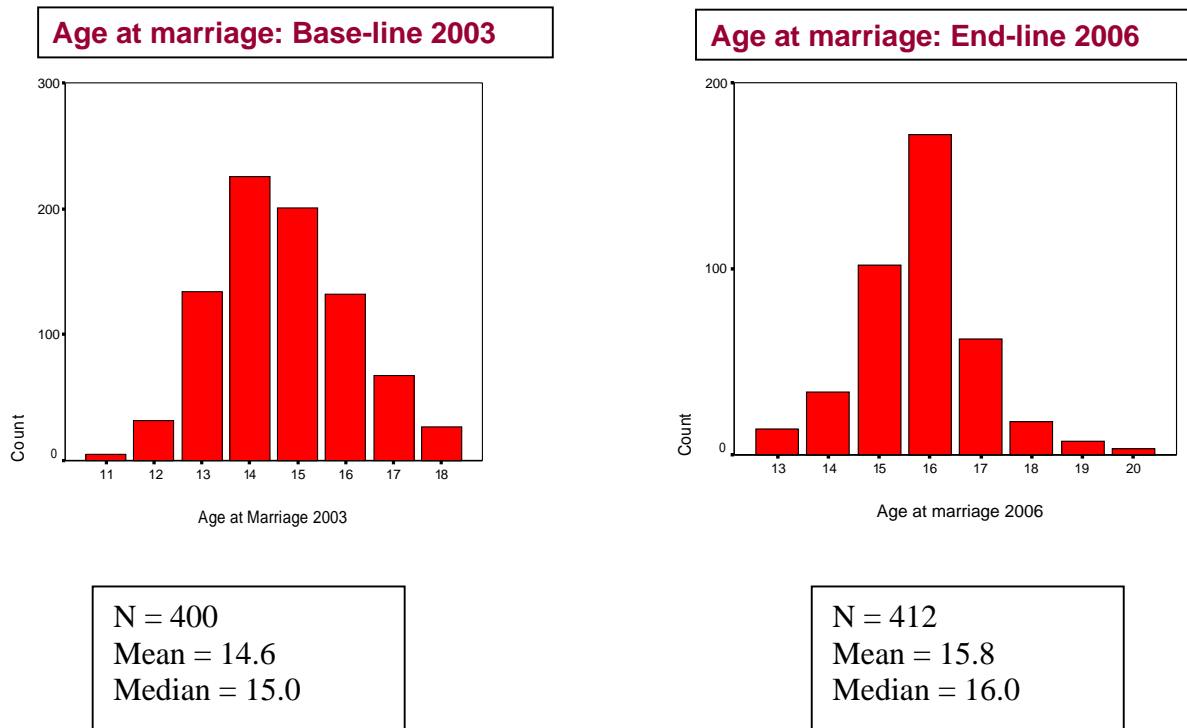
The median age at marriage increased from 15 years in base-line, to 16 years in end-line while it was 15 years in the control area. A large majority of girls got married before the legal age of 18 years at the time of baseline. The proportion of girls that got married before 14 years of age was 48 percent at baseline and about 12 percent at end line. Conversely, 26 percent girls got married after the age of 16 years at baseline compared to 64 percent at end line.

Table 1.1: Proportion of Girls by Age at Marriage

Sr.	Age at Marriage (in years)	Baseline 2003 (Percent)	End line 2006 (Percent)	Control Area 2007 (Percent)
1.	11	00.5	00.0	00.0
2.	12	03.0	00.0	02.0
3.	13	15.8	03.4	11.25
4.	14	29.5	08.3	21
5.	15	25.0	24.8	28.75
6.	16	15.5	41.7	24
7.	17	07.0	15.0	10.25
8.	18	03.8	04.4	02.25
9.	19	0.0	01.7	0.50
10.	20	0.0	00.7	0.0
	Total	**400**	**412**	**400**

There is a measurable increase in the median age at marriage at the time of end line as compared to baseline (Fig 1)

Fig 1

Age at marriage: Base-line 2003

N = 400
Mean = 14.6
Median = 15.0

Age at marriage: End-line 2006

N = 412
Mean = 15.8
Median = 16.0

Age at First Conception

All married adolescent girls who were ever pregnant were asked about their age at the time of first conception. Also, information on the interval between marriage and first conception was collected. The age at first conception was computed based on these two sets of data.

Median age at first conception increased from15.5 to 17 years after intervention (Fig 2). Where as median age at first conception in control area was 15.9 years. It is clearly seen that the first conception was delayed. An explanation for this change appears to be increase in the age at marriage. Mean interval between marriage and first conception was

6.6 months at the base-line and it increased to 10.3 months at the end-line survey while it was 8.0 in control group.

At the time of baseline, 86 percent of women who had ever been pregnant had conceived within one year after marriage but at end line there was a significant reduction to 61 percent (chi-square 49.9, p<0.0001).
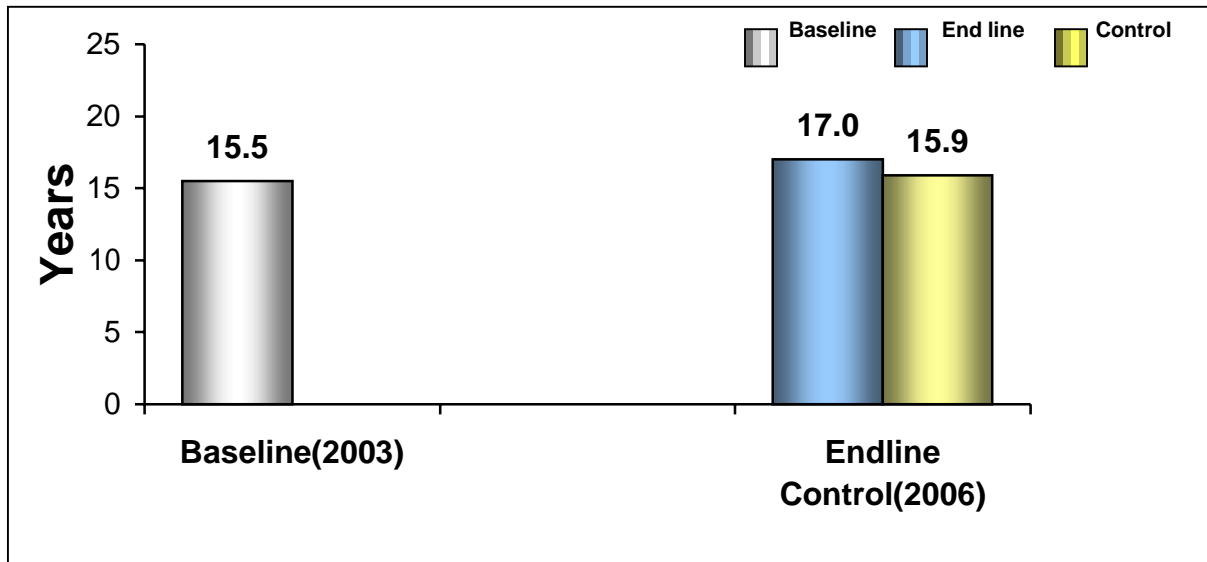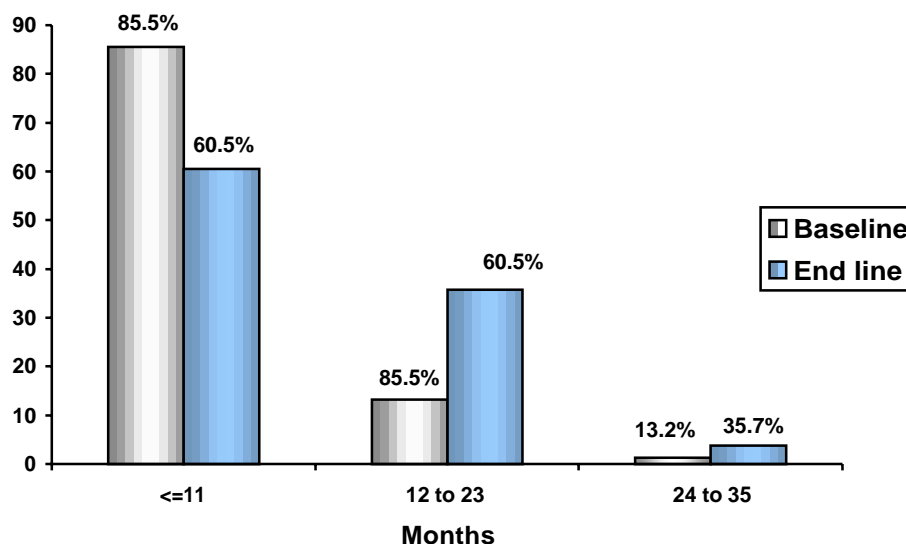
Fig 2: Median age at first conception

Table1.2 Mean interval between marriage and first conception (in months)

	Baseline 2003	End-line 2006	Control 2007
N	303	367	400
Mean Interval	6.6	10.3	08.0

Fig 3- Interval between marriage and first concepion in months

2. Behaviour Change Communication (BCC) Exposure

BCC Exposure was one of the key interventions in this study. Behaviuor Change Communication is considered to be an important tool which enhanced couple communication and also it was responsible to impart reproductive health knowledge, which finally led to high utilization of health services.

BCC exposure included group meetings, couple workshops, SATHI newsletters, pamphlets etc. Through BCC group meetings information on diet, anemia, body structure, problems related to reproductive health, abortion, family planning, care during menstruation, ANC/INC/PNC, delaying first pregnancy and LBW etc. was given.

Several questions related to BCC exposure were asked in order to measure the impact of BCC. Issues regarding attendance at the group meetings for women held at village level, and couple workshops held at institution level, frequency of reading health pamphlets, etc. were considered to make the composite index for BCC exposure. About sixty-two percent of married adolescent girls reported that they ever attended group meetings of which, only thirty- six percent attended more than three meetings. Forty two percent girls

reported that they attended couple workshops at cluster level, while seventy -one percent MAGs reported that they received pamphlets. Eighty three percent reported regular visits of CHWs at their house, which brought about early detection of pregnancies and related complications, also early ANC registration.

The composite index for BCC exposure was categorised into **High Exposure** and **Low Exposure**. High exposure was defined as exposure to three or more BCC activities in the past two years. Where as exposure to two or less activities in the past two years was considered as low exposure.

High BCC exposure was 65.7 percent while only 34.3 percent were in low BCC exposure group. It was observed that High BCC exposure was significantly associated with reduction in low birth weight, increase in reproductive health knowledge, increase in use of family planning methods, reporting of RTI symptoms.

Fig 4: Level of BCC exposure
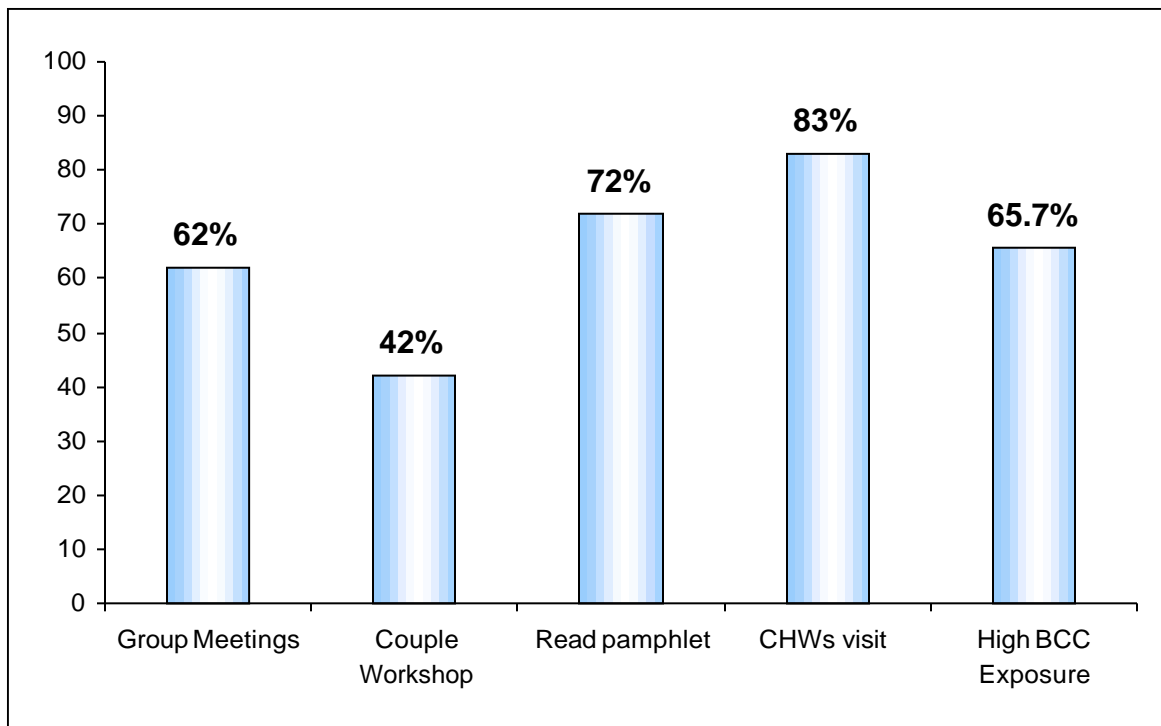
3 Currently Pregnant Mother

The proportion of currently pregnant women was higher at control than baseline while it was least at end line. The proportion of currently pregnant women registered for ANC increased from 79 percent to 81 percent. As high as 31.5 percent currently pregnant women from control area were not registered for any kind of ANC and those registered in the first trimester increased from 52 to 66 percent at the time of end line compared to base line.

Table 3.1: Details of Current Pregnancy

| Sr. No.	Variable	Category	Baseline (Percent)	End line (Percent)	Control Area (percent)
1	Currently pregnant	Yes	24.7	19.3	41.1
		No	74.3	78.0	58.6
		Unsure	01.0	02.7	00.3
2	Month of registration of this pregnancy (Among currently pregnant)	<=4 Months	52.5	65.5	58.9
		5+ Months	27.3	15.5	09.7
		percent Registered	79.8	81.0	68.5
		percent Not Registered	20.2	19.0	31.5
		N	99	58	124
3	Where services received. (For those who registered for ANC)	Govt. ANM	15.2	14.8	14.1
		IHMPANM	44.2	46.8	-
		Gov. Doctor (PHC)	30.4	02.1	12.9
		Pvt. Doctor	12.7	40.4	72.9
		N	79	47	85

4. ANC for Last Pregnancy

Data collected were from women whose last pregnancy outcome was a live birth. All these women were asked about ANC service utilization.

The proportion of pregnant women who had registered for ANC, increased from 87 percent to 95 percent while it was 81 percent in control group and those registered in the first trimester increased from 55 to 69 percent.

Table 4.1: Details of Last Pregnancy

Q. No.	Variable	Category	Baseline (Percent)	End line (Percent)	Control Area (percent)
1	Registered at which month of gestation (Asked only for those who have had live birth)	<=4 Months	55.5	69.0	58.3
		5+ Months	32.0	25.6	23.4
		Registered	87.5	94.6	81.7
		Not registered	12.5	05.4	18.3
		N	200	242	192

Fig 5: Early Antenatal Registration – AN registration within 16 weeks
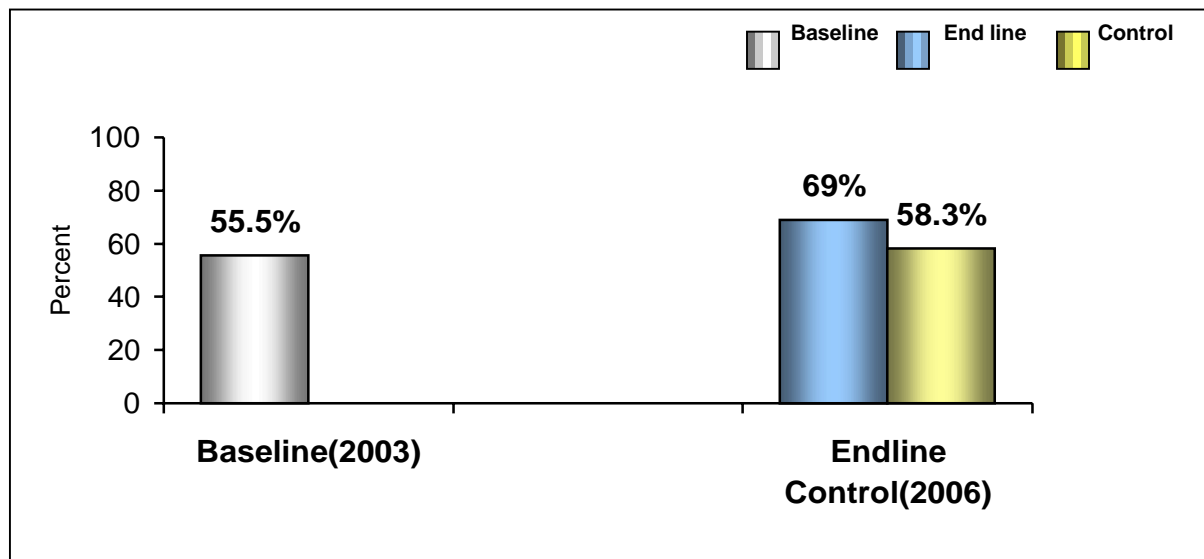
5. Coverage with TT Injections and Consumption of IFA Tablets

It was observed that there was an increased consumption of complete doses of IFA tablets by women during pregnancy. The proportion reporting complete consumption increased from 21 to 33 percent while the consumption was only 5.7 percent in control area.

Table 5.1: TT and IFA Tablets

Q. No.	Variable	Category	Baseline (Percent)	End line (Percent)	Control (Percent)
1	Number of times TT Injections during ANC	Zero	05.7	06.1	00.6
		One	21.1	27.5	10.8
		Two	58.3	57.2	80.3
		Three	14.8	09.2	08.3
2	Number of IFA tablets consumed during ANC	Nil	10.3	14.4	31.2
		Partial (<90)	68.6	53.0	63.1
		Complete (90+)	21.1	32.6	05.7

6. Complications during Antenatal Period

All the women whose last outcome of pregnancy was a live birth were asked whether they had experienced any complications during their pregnancy.

There was not much change in the prevalence and pattern of complications during pregnancy or in treatment seeking for the same. The prevalence of complications during pregnancy was 45 percent at the time of baseline and 50 percent at the time of end line. It was observed that the percentage of complications was least (31.3 percent) at the control site.

Table 6.1: Complications during Pregnancy

Q. No.	Variable	Category	Baseline (Percent)	End line (Percent)	Control Area (Percent)
1	Any problems during AN period (Asked only for those who have had live birth)	Yes	45.5	50.4	31.3
		No	54.5	49.6	68.8
		N	200	242	192
2	Breathlessness, weakness, loss of appetite	Yes	32.5	42.6	20.3
		No	67.5	57.4	79.7
3	Swelling over feet, face	Yes	19.0	14.9	16.7
		No	81.0	85.1	83.3
4	High blood pressure	Yes	05.0	05.0	4.2
		No	95.0	95.0	95.8
5	Oblique or transverse lie, breech	Yes	00.5	02.5	00.5
		No	99.5	97.5	99.5
6	Bleeding	Yes	03.0	03.7	00.5
		No	97.0	96.3	99.5
7	No foetal movement	Yes	02.5	02.1	00.5
		No	97.5	97.9	99.5
8	Jaundice, Malaria	Yes	03.5	02.1	00.5
		No	96.5	97.9	99.5
9	Place of treatment for AN complications (Only for those who have AN complications)	Govt. Hospital	12.1	13.1	15.0
		Pvt. Hospital	46.2	53.3	53.3
		Govt. ANM	03.3	0.8	01.7
		Pvt. ANM	01.1	1.6	-
		Did not go for treat.	37.4	34.4	30.0
		N	91	122	60

7. Intra natal Care

There is no difference in proportion of institutional deliveries at end line as compared to base line. At baseline, 89 percent deliveries were reported to be full term and at end line the percentage was 91. The majority of home deliveries at the rural site were still conducted by relatives.
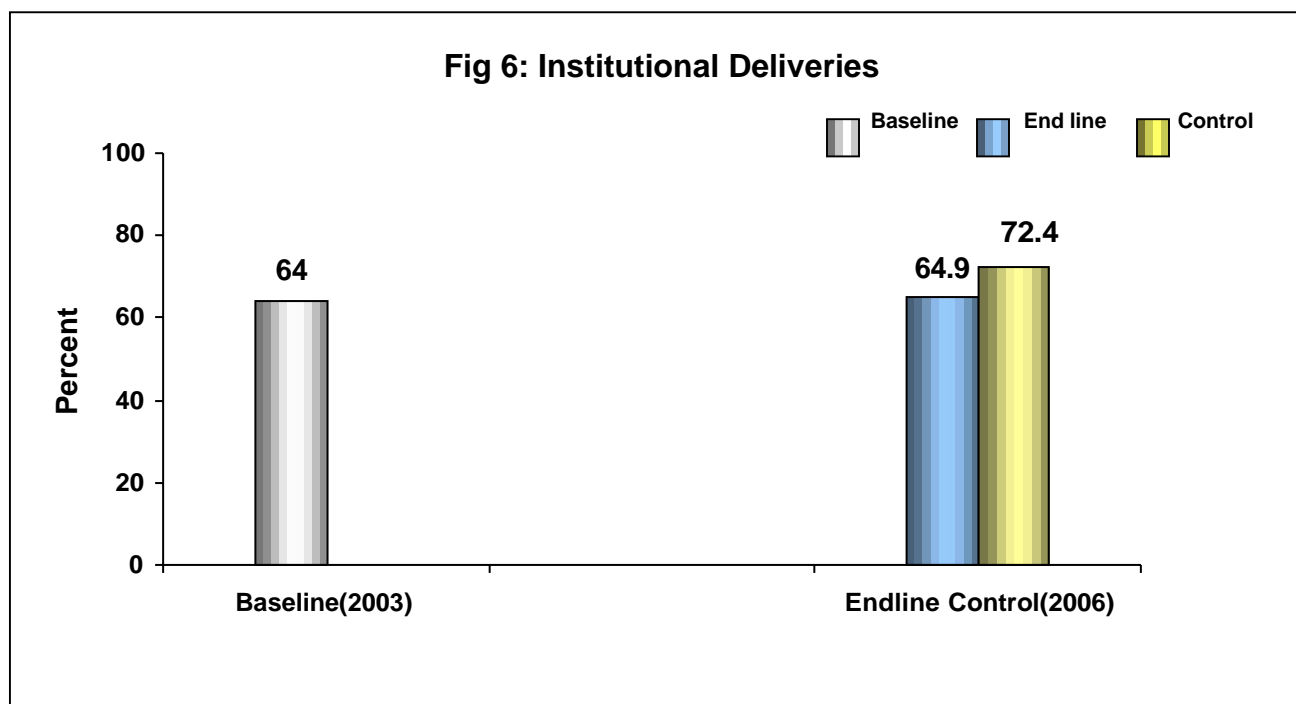
As far as intra natal complications are concerned, it was seen that there was no change in the prevalence of intra natal complications in the women at both baseline and end line.

Those women who reported complications during delivery, reported problems like premature rupture of membrane (24 percent at baseline, 20 percent at end line and 13.8 percent at the control site), excessive bleeding per vagina (30 percent at baseline, 26 percent at end line and 14.6percent at the control site), obstructed/prolonged labour (25 percent at baseline, 27 percent at end line and 6.8 percent at the control site), and large perennial tear (27 percent at baseline, 24 percent at end line and 20.8 percent at the control site).

Table 7.1: Intra natal Care

Q. No.	Variable	Category	Baseline (Percent)	End line (Percent)	Control Area (Percent)
1	Place of delivery (Asked only for those who have had live birth)	Home	36.0	35.1	27.6
		Hospital	64.0	64.9	72.4
		N	200	242	192
2	Who conducted the delivery at home? (For home deliveries)	Doctor	04.2	03.5	11.3
		Govt. ANM	09.7	08.2	07.5
		Trained TBA	16.7	15.3	15.09
		Untrained TBA	20.8	08.2	22.64
		Relatives & others	48.6	64.7	45.28
		N	72	85	53

| Q. No.	Variable	Category	Baseline (Percent)	End line (Percent)	Control Area (Percent)
3	Was the delivery full term? (Asked only for those who have had live birth)	Full Term	89.0	91.3	87.0
		Pre Term	11.0	08.7	13.0
		N	200	242	192
4	Any complications during delivery?	Yes	67.0	67.4	37.0
		No	33.0	32.6	63.0
5	Where was treatment of IN complications received	Govt. Hospital	25.4	25.8	35.2
		Pvt. Hospital	46.3	49.1	53.5
		Govt. ANM	02.9	00.6	-
		Pvt. ANM	03.7	00.6	-
		Did not go	20.9	23.9	11.3

Fig 6: Institutional Deliveries

8. Postnatal Check-ups

There was a significant increase ($p = 0.01$) in PNC coverage, from 7 percent in base-line to 16 percent in end-line. On the whole, PNC coverage increased, but the increase was not nearly close to what had been expected. One of the reasons for the low performance of PNC coverage is the large-scale migration of pregnant adolescent girls to their maternal homes for delivery. In the rural area, it becomes impossible to ensure PNC coverage for girls who choose to go to their maternal homes for their delivery.

Note: In 2005 – 2006, out of a total of 441 pregnant MAGs, 341 (78 percent) went to their maternal homes for delivery. These girls left their in-laws homes in the project area in their 7th or 8th month and returned only 3 to 4 months after their delivery. In the rural area, the proportion migrating temporarily to their natal homes for delivery is much higher among MAGs as compared to women over 20 years of age.

Table 8.1: Postnatal Visits by ANM

Q. No.	Variable	Category	Baseline (Percent)	End line (Percent)	Control Area (Percent)
1	Examination by ANM after delivery (Asked only for those who have had live birth)	Yes	07.5	16.1	05.2
		No	92.5	83.9	94.8
2	When did the ANM examine after delivery? (Asked of those who received PN checkups)	Within 6 days	86.7	71.8	80.0
		After 6 days	13.3	28.3	20.0
3	Number of times examined by ANM in first month after delivery	One	73.3	51.3	50.0
		Two	06.7	28.2	40.0
		Three +	20.0	20.6	10.0
4	Where examined by ANM	Home	40.0	41.0	40.0
		At clinic	60.0	59.0	60.0

Fig 7: Examination by ANM after Delivery

***p < 0.01
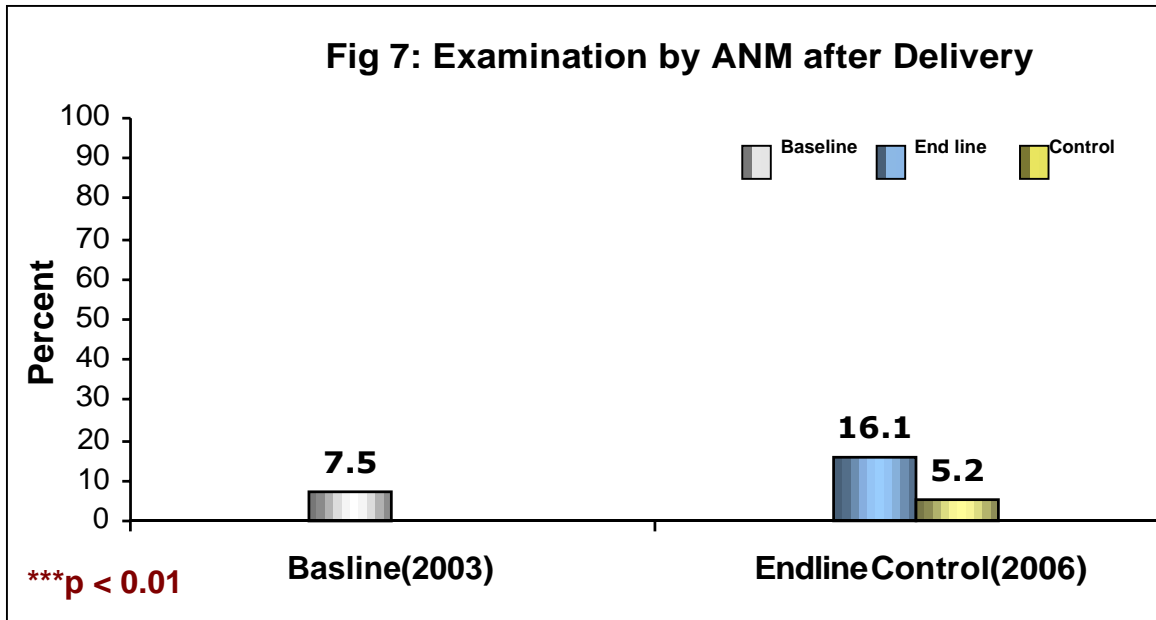
Postnatal Complications

No significant change was seen in reported postnatal complications. The prevalence at baseline was 47 percent and at end line was 47 percent while it was only 16.7 percent at the control area.

Those women who reported complications within 4 weeks after delivery, reported problems like pain at the time of passing urine (19 percent at baseline and 12 percent at end line and 4 percent at the control site), high fever with or without chills (16 percent at baseline and 14 percent at end line and 2 percent at the control site), engorged breasts (15 percent at baseline and 19 percent at end line and 3 percent at the control site) pain in lower abdomen (17 percent at baseline and 29 percent at end line and 6 percent at the control site). There was no increase in the treatment seeking behaviour for postnatal complications.

Table 8.2: Postnatal Complications

| Q. No.	Variable	Category	Baseline (Percent)	End line (Percent)	Control Area (Percent)
1	Any complications within 4 weeks after delivery (Asked only of those who have had live birth)	Yes	47.5	47.1	16.7
		No	52.5	52.9	83.3
		N	200	242	192
2	How many days after occurrence of PN complications did you go for treatment?	Within 6 days	48.4	37.6	50.0
		After 6 days	08.4	12.4	12.5
		Did not go	43.2	50.0	37.5
		N	95	114	32
3	Place of treatment for PN complications	Govt. Hospital	07.4	08.8	35.0
		Pvt. Hospital	85.2	86.0	60.0
		Govt. ANM	7.3	5.2	05.0
		N	54	57	20

9. Abortions

Sixteen percent women reported abortions at baseline, which reduced to 13 percent out of the total pregnancies in the 13 to 19 years age group.

The proportion of spontaneous abortions was 12 percent at baseline, which reduced to 10 percent in 2006 and it was 10 percent in the control area.

The prevalence of post abortion complications reduced from 65 to 56 percent where as it was 70 percent in the control area and the treatment seeking behaviour for post abortion complications, within the first week after an abortion, increased from 38 to 66 percent. However, the treatment seeking behaviour for post abortion complications, within the first week after an abortion was observed to be least in control area (34.6 percent)

Fig 8. Abortion rate (rural)
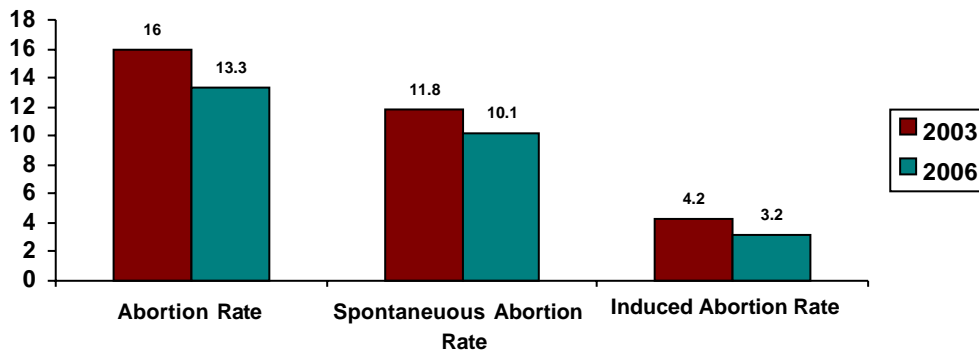
10. Low Birth Weight:

Women, whose last pregnancy outcome was a live birth, were asked whether birth weight of the baby was taken. The proportion of neonates weighed on the day of birth increased from 63 percent at baseline to 65 percent at end line.

Table 10.1: Birth Weight

Q. No.	Variable	Category	Baseline (Percent)	End line (Percent)	Control (Percent)
1	When was the baby weighed for first time? (Asked only for those who have had live birth)	Within 1 day	63.0	65.3	74.5
		# days after birth	15.0	20.2	14.6
		Not weighed	21.5	14.5	10.4
		Don't remember	00.5	00.0	0.5
		N	452	242	192

There was a significant reduction in the prevalence of LBW babies (for babies whose weights were taken on the day of birth) from 39 to 25 percent where the *p value* = 0.014 between base-line and end-line.
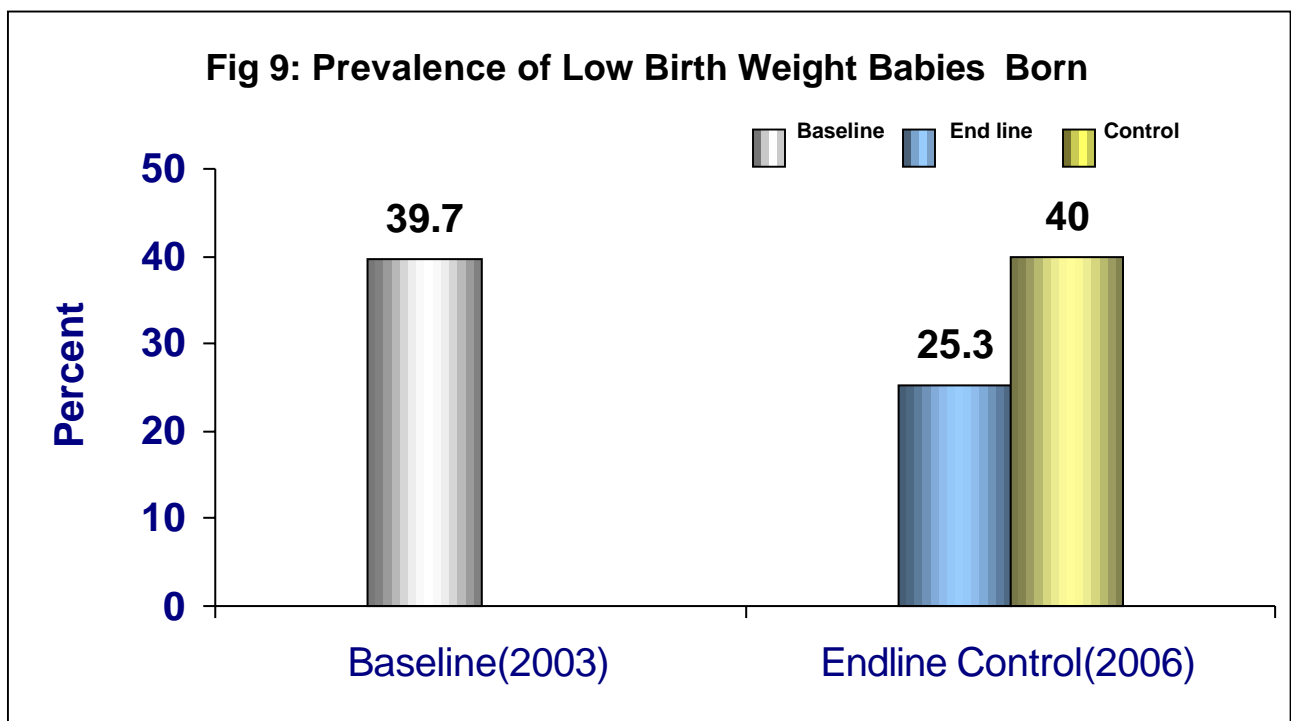
Fig 9: Prevalence of Low Birth Weight Babies Born

Legend: Baseline, End line, Control

- Baseline(2003): 39.7
- Endline Control(2006): End line 25.3, Control 40

Y-axis: Percent (0 to 50)

Table 10.2 Characteristics Associated with Low birth weight Logistic Regression Analysis

Variable	Category	Odds ratio	Confidence Interval
BCC exposure	High BCC exposure	1	
	Low BCC exposure	3.33*	1.43-7.77
Adjusted for education, occupation, no. of rooms, frequency of meals in pregnancy, registration for antenatal services, consumption of IFA, antenatal complications and age at first conception. *p<0.05 ** - p<0.001			

The proportion of low birth weight babies was higher (39.3percent) in low BCC exposure group than in high BCC exposure group (17.6percent). It can be concluded from the above table that the group with low BCC exposure have 3.33 times higher odds of having low birth babies than the higher BCC exposure group.

10. Reproductive Morbidity

About 57 percent of married adolescent girls reported one or more problems before or during menstruation at baseline, and 73 percent reported problems at end line. The increase in prevalence is probably due to better awareness and reporting by the respondents.

The proportion of MAGs that sought treatment for menstrual problems increased from 20 percent at baseline to 22 percent at end line. The majority of women use cotton cloth during menstruation both at baseline and end line. There was some increase in the proportion of women who change cloths 3 or more times a day (5.7 percent at baseline and 9 percent at end line)

UTI: - About 20 percent of married adolescent girls reported one or more symptoms of urinary tract infections at baseline and 29 percent at end line. Whereas 21 percent married

adolescent girls went for treatment for UTI symptoms at baseline, treatment seeking for UTI increased to 29 percent at end line.

RTI: - The prevalence of RTI reduced at end line as compared to base line. About 36 percent of married adolescent girls reported that they had one or more problems related to reproductive tract infections (RTIs) at baseline and 27 percent at end line. The prevalence of RTI was observed to be low (22.percent) in the high BCC exposure group than in low BCC exposure group (35.9 percent).

Fig 10: Proportion of MAGs with RTI Symptoms
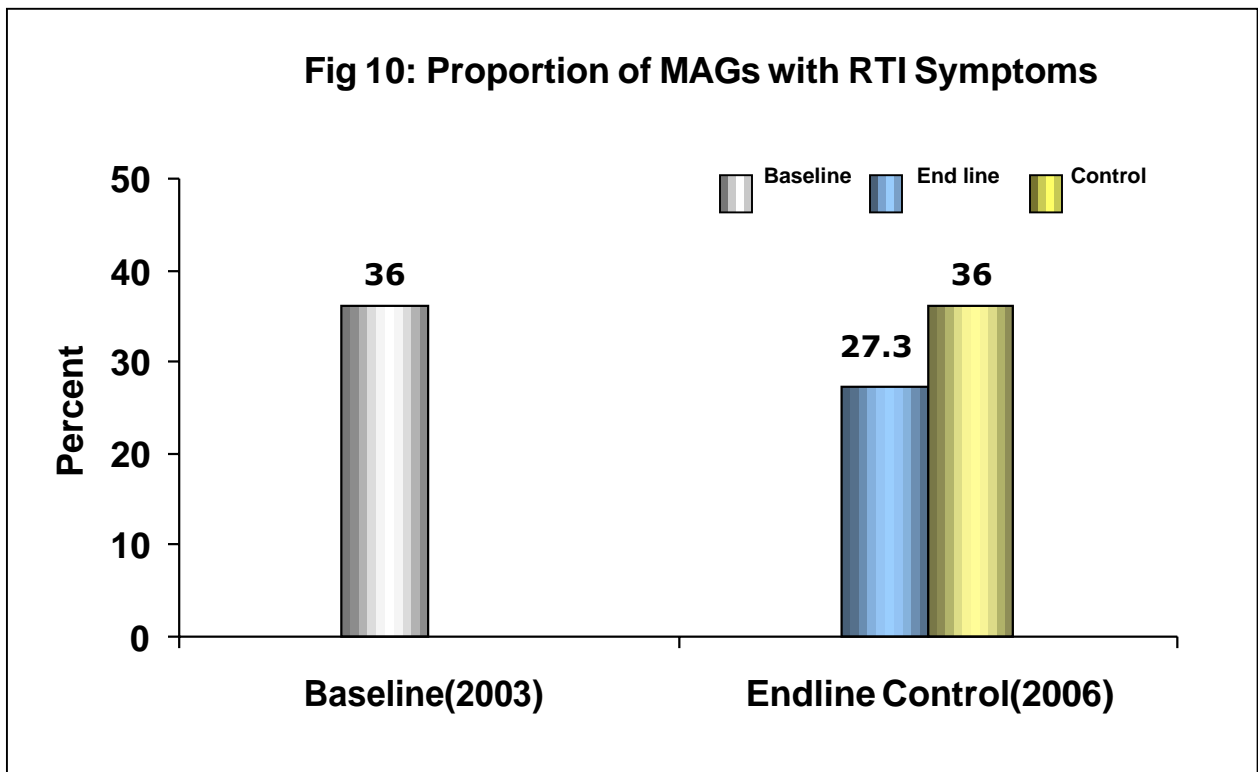
Those women who reported one or more symptoms of RTI, reported problems like white discharge per vagina (14 percent at baseline and 7 percent at end line), itching in private parts (10 percent at baseline and 8 percent at end line), lower abdominal pain (14 percent at baseline and 11 percent at end line), excessive bleeding and pain during menses (9 percent at baseline and 10 percent at end line) and pain during coitus (9 percent at baseline and 5 percent at end line). Treatment seeking for RTI increased from 25 to 42 percent.

Table 11.1 Characteristics Associated with Reported Prevalence of RTI Symptoms: Logistic Regression Analysis

Variable	Category	Odds ratio	Confidence Interval
Post natal complications	**Yes**	2.42*	1.27-4.45
	No	1	
Age at first conception	**<=17 years**	2.36*	1.05-5.33
	18+ years	1	
Knowledge of Reproductive Health	Low	1	
	High	2.14*	1.06-4.32
* - p<0.05 ** - p<0.001			
Adjusted for education, occupation, husband's education, no. of rooms, history of abortion and place of delivery.			

The odds of having RTI symptoms were 2.4 times higher in women who had a history of post natal complications. MAGs less than 17 years were 2.4 times more likely to have reported RTI symptoms as compared to MAGs older than 18 years. The odds of having RTI symptoms were 2.1 times higher in MAGs with a higher level of knowledge of reproductive health.

STI: - The prevalence of STI reduced at end line as compared to base line. About 5.5 percent of the women reported that they had one or more problems related to STI at baseline, which reduced to 3 percent at end line.

12. Family Planning

There was a substantial increase in the use of temporary family planning methods. The proportion of those who had ever used contraceptives increased from 12 to 26 percent in the project area, where as prevalence of ever used contraceptives was 6 percent in the control area in 2007. The proportion of MAGs using temporary contraceptives at the time of the survey increased from 10.6 to 23 percent where as in the control area current use of contraceptives was 7 percent. This increase was primarily for child spacing rather than delaying age at first conception. There was a significant increase in the usage of temporary contraceptive from base-line to end-line, where *p* value is 0.000. It was observed that ever use of contraceptives and current use of contraceptives was higher (27.9 percent and 25.7 percent) in high BCC exposure group than in low BCC exposure group (23.3 percent and 18.7 percent).
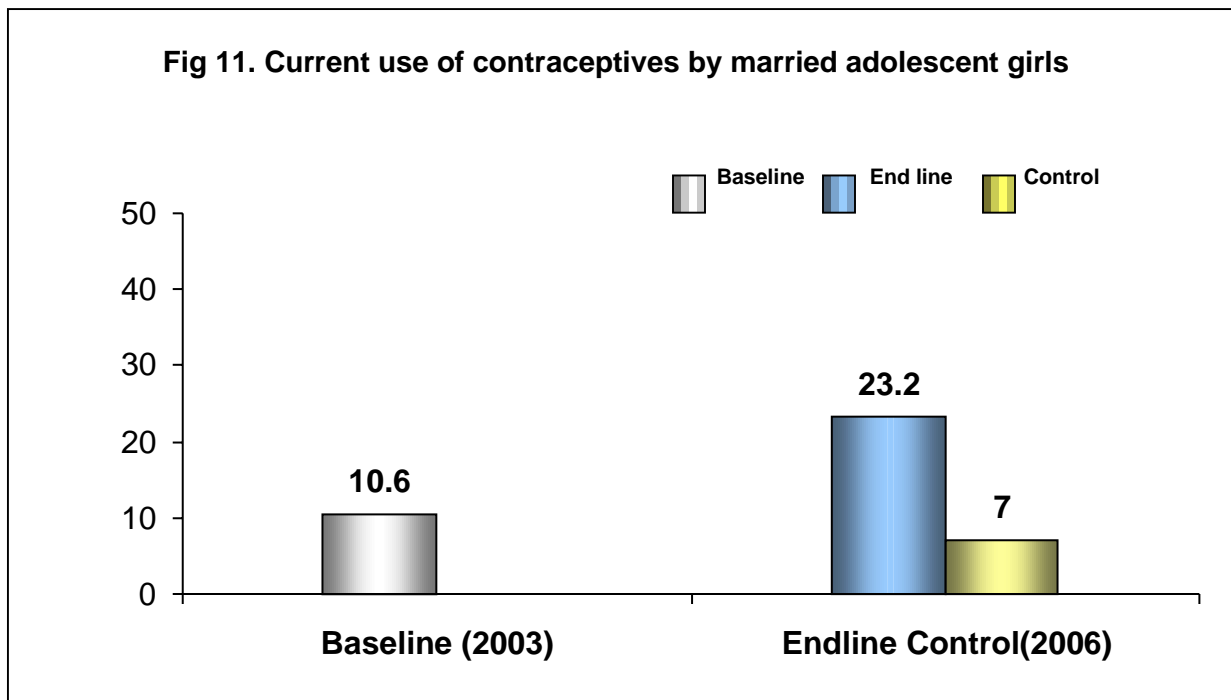

Fig 11. Current use of contraceptives by married adolescent girls

Table 12.1 Characteristics Associated with Use of Temporary Family planning methods - Logistic Regression Analysis

Variable	Category	Odds ratio	Confidence Interval
History of abortion	Yes	2.74*	1.34-5.59
	No	1	
Age at first conception	<=17	2.89**	1.01 – 8.23
	18+	1	
Number of living children	0	1	
	1	3.48	0.69-17.4
	2+	5.35*	1.06-26.9
RH knowledge	High	2.14*	1.13-4.07
	Low	1	
* p<0.05 ** p<0.001			

It was observed that the married adolescent girls, who had previous history of abortions, had 2.74 times higher odds of using temporary family planning methods. Also those who had high reproductive health knowledge had 2.14 times higher odds of using temporary family planning methods.

13. Male Involvement in Child Rearing

Married young women who had one or more children were asked whether their husbands helped them in child rearing - like feeding the child, bathing and cleaning the child, taking the child to the hospital, looking after the child, etc. There was hardly any increase in male involvement in child rearing between base-line and end-line. In the control area proportions were lower on all the variables of male involvement in child rearing as compared to baseline figures.

Table 13.1: Male Involvement in Child Rearing

Q. No.	Variable	Category	Baseline N=200 (Percent)	End line N=247 (Percent)	Control area N=191 (Percent)
1. Does your husband help in any of the following work?					
A	Feeding the child	Yes	59.0	57.9	48.7
B	Bathing & cleaning the child	Yes	22.5	18.6	15.7
C	Taking the child to the hospital	Yes	80.0	81.4	68.6
D	Looking after the child when ill	Yes	84.5	83.8	60.2
E	Taking the child for immunization	Yes	53.0	37.2	33.0
F	Taking the child to AWW	Yes	19.0	20.6	12.6
G	Sits and plays with the child	Yes	81.5	69.6	34.6
2.	How many Paise in a Rupee do you feel that your husband helps in the above child rearing practices?	0-33	39.0	46.2	70.7
		34-66	35.5	30.7	19.4
		67-100	25.5	23.1	09.9

14. Dietary Behaviours

All women were asked about iron rich foods that they had consumed in the last one week. The proportion of MAGs reporting the intake of rice flakes at least once a week increased from 20 percent at baseline to 41 percent at end line. MAGs reporting consumption of roasted Bengal gram at least once a week increased from 13 percent to 21 percent, and the reported intake of moth beans increased from 24 percent to 50 percent.

In terms of green leafy vegetables, the proportion of MAGs reporting intake of colocasia increased from 16 percent to 23 percent, the intake of *methi* increased from 13 percent to 29 percent, the intake of onion stalks increased from 4 percent to 20 percent, and the intake of Bengal gram leaves increased from 11 percent to 48 percent.

The consumption of locally available fruits, like sweet lime and raw mango, increased at end line as compared to baseline. More women were found to be consuming uncooked

vegetables in their daily diet at end line as compared to baseline (21 percent to 45 percent). Also the consumption of sprouts had increased from base-line to end-line. There was not much difference in the reported consumption of non-vegetarian food from baseline to end line.

Table 14.1 Consumption of Lemon, Raw vegetables and Sprouted Legumes

S. No.	Variable name	Category	Base-line percent	End-line percent	Control percent
1	Do you squeeze lemon in your food?	Yes	24.3	24.7	20.0
2	Do you take raw vegetables in your meals?	Yes	21.0	44.7	24.5
3	Do you sprout your legumes before consumption?	Yes	54.5	62.3	32.3

Table 14.2: Dietary Pattern

Q. No.	Variable	Category	Baseline N=400 (Percent)	End line N=300 (Percent)
1. What out of the following list of foods did you consume in the previous one-week?				
a. Cereals				
1	Bajra	Yes	52.7	34.3
2	Rice flakes	Yes	20.0	40.7
3	Puffed rice	Yes	26.0	29.3
b. Legumes				
1	Bengal gram	Yes	32.2	39.3
2	Roasted Bengal gram	Yes	13.7	21.3
3	Cow pea	Yes	13.2	11.3
4	Moong	Yes	16.7	15.7

5	Moth beans	Yes	24.2	50.0
6	Dried Peas	Yes	10.7	11.3
7	Soybeans	Yes	02.2	03.3
c. Leafy vegetables				
1	Colocasia	Yes	16.2	23.3
2	Methi	Yes	13.5	29.7
3	Shepu	Yes	40.0	24.3
4	Amaranth	Yes	05.0	02.0
5	Radish leaves	Yes	00.3	02.7
6	Onion stalks	Yes	04.0	19.7
7	Drumstick leaves	Yes	00.5	02.0
8	Bengal gram leaves	Yes	11.0	48.0
d. Non-Veg				
1	Mutton	Yes	29.0	30.0
2	Chicken	Yes	11.0	06.0
3	Fish	Yes	05.0	06.0
4	Bombay duck	Yes	06.5	06.7
e. Fruits				
1	Guava	Yes	05.5	00.0
2	Sweet Lime	Yes	27.2	37.0
3	Papaya	Yes	05.0	28.7
4	Tomato	Yes	26.7	55.3
5	Awala	Yes	00.3	01.3
6	Raw mango	Yes	07.0	63.3

Conclusion:

It was observed that there was increase in Age at Marriage and Age at First Conception by one year. The proportion of currently pregnant women was higher at control than baseline while it was least at end line. The proportion of pregnant women who had registered for ANC, increased in end-line as compared to base-line. It was observed that, there was an increased consumption of complete doses of IFA tablets by women during pregnancy. There was not much change in the prevalence and pattern of complications during pregnancy or in treatment seeking for the same. There was a slight shift toward institutional deliveries. The majority of home deliveries at the rural site were still conducted by relatives. As far as intra natal complications are concerned, there was no change in the prevalence of intra natal complications in the women at both baseline and end line. On the whole, PNC coverage increased, but the increase was not nearly close to what had been expected. Postnatal visits received by mothers from ANMs showed an increase at end line. The low performance of PNC coverage is the large-scale migration of pregnant adolescent girls to their maternal homes for delivery. In the rural sector, it becomes impossible to ensure PNC coverage for girls who choose to go their maternal homes for their delivery. No significant change was seen in reported postnatal complications. There was no increase in the treatment seeking behaviour for postnatal complications. The prevalence of post abortion complications was reduced. The treatment seeking behaviour for post abortion complications, within the first week after an abortion increased. There was a significant reduction in the prevalence of LBW babies. The proportion of low birth weight babies was higher in low BCC exposure group than in high BCC exposure group. The proportion of MAGs that sought treatment for menstrual problems increased from baseline as compared to end line. The prevalence of RTI reduced at end line as compared to base line. It was observed that Married Adolescent Girls (MAGs) who had post natal complications, high knowledge of Reproductive Health and were les than 17 years of age had more likelihood of having self reported RTIs. It was observed that treatment seeking for RTIs increased. The prevalence of RTIs was observed to be low in the high BCC exposure group than in low BCC exposure group. About 20 percent of married adolescent girls reported one or more symptoms of urinary

tract infections at baseline and at end line. There was a substantial increase in the use of temporary family planning methods. It was observed that the married adolescent girls, who had previous history of abortions and high reproductive health knowledge, had higher odds of using temporary family planning methods. There was hardly any increase in the male involvement in child rearing between baseline and end line. When the information regarding dietary behaviour was collected, it was observed that the consumption of locally available fruits, like sweet lime and raw mango, increased at end line as compared to baseline. The proportion of MAGs reporting the intake of rice flakes at least once a week increased. In terms of green leafy vegetables, the proportion of MAGs reporting intake was increased. More women were found to be consuming uncooked vegetables in their daily diet at end line as compared to baseline.

"It can be concluded that High BCC exposure was significantly associated with reduction in low birth weight, increase in reproductive health knowledge, increase in use of family planning methods, reporting of RTI symptoms."

Implications

Interventions like BCC exposures can have positive impact on communication and interaction at different levels in adolescent girls group. Uninterrupted BCC programs should be organized so as to sustain the advancement in the above indicators.

Intervention like provision of primary level health care through regular community health workers home visits would enhance knowledge of adolescent girls regarding various issues as well as it can boost treatment seeking behaviour. Thus all these interventions should be considered while making a policy on adolescent reproductive health, especially for married adolescent girls so that to make these future mothers equipped with complete knowledge of reproductive health and service utilization. Such actions taken by government to promote adolescent reproductive health will have far reaching implications for young people, communities and nation.

Age at first conception End line