

# **Improving Health Status of Women and Institutional Delivery of Public Reproductive Health Services in Rural West Bengal**



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## **PREFACE**

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**Project Title: Improving health status of women and institutional delivery of public reproductive health services in rural West Bengal**

**Project Sponsor: Rosa Luxemburg Stiftung (RLS), Germany**

**Project Implementer: Institute of Development Studies Kolkata (IDSK)**

**Project Period: 2010-2011**

**Project Site: Mohammed Bazar block, Birbhum district, West Bengal**

In India, the reduction in levels of maternal mortality and improvement of maternal health have been one of the central policies and programmes since the International Conference on Population and Development (ICPD) held at Cairo in 1994. Reproductive and Child Health (RCH) programme, which was initiated during 1997-98 in India as a consequence of ICPD, was recognized as ‘paradigm shift’ from the earlier ‘target oriented approach’ of family welfare programme. The National Population Policy (2000) and the National Health Policy (2002) also reiterated the goal of safe passage to motherhood and reproductive rights.

Despite acknowledging that rural Indian women (women from rural West Bengal as well) are at a disadvantageous position regarding their health status, little has been done for the increase in health awareness, minimization of the incidence of morbidity (both reproductive and non-reproductive) and encouragement in seeking treatment, especially from the public sector. In view of this, the Institute of Development Studies Kolkata (IDSK), in partnership with Rosa Luxemburg Stiftung (RLS), Germany, initiated a research/intervention project, entitled “Improving health status of women and institutional delivery of public reproductive health services in rural West Bengal”. This project aimed to develop and test an integrated package of intervention on health awareness generation focusing on behavioral and preventive aspects of health among women. The objective of the project is to examine the extent to which the intervention improved the social, non-reproductive and reproductive health situation of women and enhanced treatment seeking behaviour, particularly from public sources.



The Project was implemented in the rural settings in Birbhum district - Mohammed Bazar block, which is one of the most backward blocks of the Birbhum district according to the Birbhum District Development Report, 2008.

Quasi-experimental research design, with cross-sectional surveys conducted in control and intervention villages prior to the implementation of intervention activities (baseline) and at its conclusion (endline), was used to evaluate the outcome (effect) of intervention activity. In the absence of any previous diagnostic study in the study area, the design of the intervention was based on anecdotal evidences on health awareness, prevalence of morbidity and treatment of ailments and thus the intervention was purely exploratory in nature. After discussions with the local level health care providers and politically elected local representatives of *panchayet*, three general areas for action were identified: first, information provision on general and reproductive health; second, emphasis on preventive aspects of general and reproductive health care and third, facilitation in organizing monthly health information and check-up workshops by the doctors from the district hospital.

Findings indicate that the exposure to the intervention had a positive and significant net effect on most of the indicators reflecting the level of awareness about the signs and symptoms of general illnesses, gynaecological and obstetric complications. However, the net effect of exposure to the intervention was mixed with regard to the indicators related to reporting of illnesses, seeking treatment and choice of providers while seeking treatment.

We put on record our sincere gratitude to all who have helped us in implementing the project. We are grateful to Rosa Luxemburg Stiftung, Berlin, for funding this project. We are especially thankful to Carsten Krinn, Sonja Blasig, Vinod Kosthi and Rajiv Kumar for their cooperation. We are also grateful to the Institute of Development Studies Kolkata (IDSK) for giving us the opportunity to implement this project. We are especially thankful to Professor Amiya Kumar Bagchi, Director of IDSK, Dr. Ramkrishna Chatterjee, Joint Director, for helping us whenever such help was needed. We express our sincere gratitude to all the faculty members and supporting staff of IDSK for their help from time to time. A special word of thanks is reserved for Sudipto Sarkar, who maintained the accounts. We received excellent support from Dr. Abhijit Chowdhury, Secretary, Liver Foundation, Dr. Saibal Majumder and Dr. Kajal Chatterjee of District Hospital, Birbhum, in implementing the intervention activities in the study villages – we thank them for their cooperation. We are also grateful to the Ex-District Magistrate of Birbhum, Dr. Soumitra Mohan; Ex-SDO of Suri Sadar, Mr. Sudatta Chowdhury for their constant support and encouragement. We recall with gratitude the

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## CHAPTER 1

# INTRODUCTION



## Chapter 1

# Introduction

### 1.1 Background

Over the past two decades, impressive strides have been made in reducing levels of infant and childhood mortality and in increasing levels of contraceptive use in developing countries. In contrast, progress in reducing maternal mortality and morbidity has been much slower despite it being one of the central elements of the Millennium Development Goals (MDGs) (Wagstaff and Claeson, 2004). According to estimates provided by WHO (2004), about 525,000 women, almost all from developing countries, continue to die each year from maternal related causes. It may be noted that poor health status has repercussions not only for women but also for their families. Low birth weight babies are more likely to be born to women in poor health. These women also are less likely to be able to provide adequate nutrition and better care to their children. Moreover, a woman's health affects the household economic well-being, as a woman in poor health will be less productive in the labour force.

Reproductive morbidity is defined as “any morbidity or dysfunction of the reproductive tract or any morbidity which is consequence of reproductive behaviour including pregnancy, abortions, childbirths, or sexual behaviour” (WHO, 1990). Reproductive morbidity refers to conditions of ill health related to the reproductive process during and outside the childbearing period (Zurayk et al., 1993; Oomman, 2000). Reproductive morbidity has been classified into three types: *Obstetric*, *Gynecological*, and *Contraceptive* (Zurayk et al., 1993; Fortney, 1995; Dasgupta, 1995; Chellan, 2004). Obstetric morbidity can be defined as ill health related to pregnancy episode. Gynecological morbidity can be defined as structural and functional disorder of the reproductive tract (genital tract) not related to pregnancy, delivery or post-partum period. Contraceptive morbidity refers to the conditions arising out of limiting fertility by using traditional or modern methods of contraception. It may be noted that reproductive morbidity in general, is not only an outcome of biological factors but also determined by women's poverty, powerlessness, lack of control over her own body and family resources. Malnutrition, low age at marriage coupled with early and repeated childbearing also plays a significant role in poor maternal health outcomes. At the same time, the general health status of women, which also has an influence on reproductive health status, should not be ignored.

Studies from developing countries including India have reported that more than half of the women had reproductive illness including reproductive tract infections (RTIs), uterine prolapse, menstrual problems, abnormal vaginal discharge and problems related to infertility (Xia et al. 2004; Go et al. 2006; Rathore et al. 2007; Prasad et al. 2005; Patel et al. 2006; Bang et al. 1989; Rani and Bonu 2003; Rutstein and Shah 2004; Gulati et al. 2009; Bhandari and Kannan 2010). Various studies conducted in different regions of India and in other developing countries have also reported the high prevalence of obstetric morbidities such as edema, fits and convulsions, hypertension, anemia etc. during antenatal period (Sontakke et al. 2009; Cham et al. 2007); hemorrhage, eclampsia and obstructed labour during delivery (IIPS 2007). Additionally, most of these studies have attributed such high prevalence of reproductive morbidity to the childbearing pattern (Go et al. 2006); utilization of existing health services (Prasad et al. 2005); health-related behaviour (Rahman et al. 2004); and background characteristics including household's standard of living (Rathore et al. 2007); community affiliation (ibid); and utilization of social institutions (Xia et al. 2004; Aggarwal et al. 1999). However, there is hardly any comprehensive study available on general health status of women.

In India, the reduction in levels of maternal mortality and improvement of maternal health have been one of the central policies and programmes since the International Conference on Population and Development (ICPD) held at Cairo in 1994. Reproductive and Child Health (RCH) programme, which was initiated during 1997-98 in India as a consequence of ICPD, was recognized as 'paradigm shift' from the earlier 'target oriented approach' of family welfare programme. The National Population Policy (2000) and the National Health Policy (2002) also reiterated the goal of safe passage to motherhood and reproductive rights.

Despite all these policy arguments and the fact that most of the gynecological and obstetric problems can be cured easily if they are detected early and given proper treatment (Rani and Bonu, 2003), previous studies revealed that the majority of the symptomatic women neither sought formal nor informal treatment (Bang and Bang 1994; Narayan and Srinivasan 1994; Madhiwala et al. 2000) and most often the reasons cited were 'treatment was unnecessary' (Bhandari and Kannan, 2010). This could be similar to the 'culture of silence' discussed in Bro (1993). Some of the studies observed that women sought treatment only when they perceived the symptoms were severe (Kanani et al. 1994; Bhatia and Cleland 1995). Even if they seek treatment, a majority of women obtain treatment from quacks or unqualified private practitioners or from the traditional healer. Untreated infections not only

lead to a range of diseases such as pelvic inflammatory disease (PID), ectopic pregnancy, infertility, cervical cancer but also lead to an increase risk of fetal loss and HIV infections.

Being the second largest densely populated state with a share of 7.5 percent of the country's population, the general (non-reproductive) and reproductive health status of women is relatively unknown in West Bengal due to lack of studies. District Level Household and Facility Survey (DLHS)-3, 2007-08, reported that the prevalence of obstetric complications was very high in rural West Bengal. Among rural women of reproductive age group who have given a live-birth or still-birth during three years preceding the survey, nearly four out of five have suffered from obstetric related complications. The third round of National Family and Health Survey (NFHS) conducted during 2005-06 estimated that 76 percent mothers received at least one antenatal check-up, 61 percent babies were delivered at home and 47 percent mothers received the help of trained health professionals during delivery. It was found in another survey of North 24 Parganas district of West Bengal that 71 percent mothers delivered babies at home (Bharati et al. 1998). Mukhopadhyay et al. (2004) studied three districts of West Bengal during 1999 and found that women generally did not go for institutionalized delivery due to unaffordable cost, unfair behaviour of hospital staff and feeling of insecurity in the hospital. A study conducted in the Birbhum district of West Bengal revealed that 65 percent mothers go to doctors for antenatal check-up during their pregnancy but only 26 percent mothers delivered babies in institutions and 30 percent mothers received help of trained medical personnel during delivery (Bharati et al., 2007). DLHS-3, 2007-08, also reported that more than 40 percent of rural women of reproductive age group suffered from any gynecological problem during three months preceding the survey.

Treatment seeking for the obstetric and gynecological problems was also low in West Bengal especially that from public sources as reported by DLHS, 2007-08. Although more than 3 out of 5 women sought treatment for obstetric morbidity, more than half of the women did not seek any treatment for gynecological morbidity (ibid). Moreover, it was found that about 14 percent of currently married women reported the problem of infertility and about 9 out of 10 sought any treatment for that. However, the proportions of seeking treatment from the public sources are low as found in other states.

Despite acknowledging that rural Indian women (women from rural West Bengal as well) are at a disadvantageous position regarding their health status, little has been done for the increase in health awareness, minimization of the incidence of morbidity (both reproductive and non-reproductive) and encouragement in seeking treatment, especially from



the public sector. In view of this, the Institute of Development Studies Kolkata (IDSK), in partnership with Rosa Luxemburg Stiftung (RLS), Germany, initiated a research/intervention project, the “Improving health status of women and institutional delivery of public reproductive health services in rural West Bengal” project. This project aimed to develop and test an integrated package of intervention on health awareness generation focusing on behavioral and preventive aspects of health among women.

The project was formulated on the hypothesis that health awareness (non-reproductive and reproductive) would improve women’s knowledge regarding reproductive and non-reproductive health issues and their early detection by identifying signs and symptoms. Preventive health behaviour would possibly reduce both the incidence (new cases) and also the prevalence of diseases. For example, if a woman, who suffered from anemia at the time of intervention, is given information about *fig*, *green banana (musa species)* & *kulekhara (hygrophila spinosa)* and encouraged to eat these food items, her level of anemia would be reduced. Also, if a woman, who was not suffering from anemia at that point of time, eats these food items, it would prevent her from being anemic. Moreover, emphasis on seeking treatment, especially from the public sector, would generate demand for healthcare in the community as a whole and enhance the ‘culture’ of seeking treatment from modern qualified sources.

Only a few intervention projects that were targeted on women have been implemented in India. For example, the community based First Time Parent Project targeted towards newly young married women to improve the maternal health behaviour implemented by CINI, West Bengal; Deepak Charitable Trust, Gujarat with technical support from Population Council and International Institute for Population Sciences, Mumbai during the last decade. Each project is unique in terms of geographic location and approach of the study. Findings from these intervention evaluation programmes could provide a useful insight into what does and does not work with regard to programming for women’s health.

## 1.2 Objectives

Against this backdrop, the objective of the project is to examine the extent to which the intervention improved the social, non-reproductive and reproductive health situation of women and enhanced treatment seeking behaviour, particularly from public sources. Specifically, the report assesses the extent to which exposure to the intervention

- Influenced the level of awareness on symptoms and signs of common non-reproductive and reproductive health (gynecological and obstetric) problems;

- Reduced the prevalence of non-reproductive and reproductive ailments;
- Improved treatment seeking behaviour, especially from public sources.

### 1.3 Study settings

Birbhum district is one of the typical backward districts of West Bengal. Although ethnically the people are proportionately heterogeneous, a large proportion of the population belongs to marginalized sections of the society. According to 2001 Census of India, 29.5 percent were scheduled caste, 6.7 percent were scheduled tribe and 35.1 percent were Muslim. Moreover, more than 90 percent of the population lives in the rural areas and earn their livelihood through agriculture and related activities (RGI, 2001). A few key indicators of the study district, and the state where it is located, are presented in Table 1.1.

**Table 1.1: Profile of the study district (Birbhum) vis-à-vis state (West Bengal)**

Characteristics	Birbhum	West Bengal
Population (in '000) <sup>\$</sup>	3,502	91,347
Population/KM <sup>2S</sup>	771	1029
Overall sex ratio <sup>\$</sup>	956	947
Child sex ratio (0-6 years) <sup>\$</sup>	952	949
% of SC to total population <sup>*</sup>	29.5	23.0
% of ST to total population <sup>*</sup>	6.7	5.5
% of Muslim to total population <sup>*</sup>	35.1	25.2
Male literacy (%) <sup>\$</sup>	77.4	82.7
Female literacy (%) <sup>\$</sup>	64.1	71.2
Literacy among SC (%) <sup>*</sup>	45.7	59.0
Literacy among ST (%) <sup>*</sup>	31.2	43.4
Institutional delivery (%) <sup>@</sup>	48.7	49.2
Current contraceptive use (%) <sup>@</sup>	74.8	72.7
Mothers who had at least three antenatal check-ups for the last birth (%) <sup>@</sup>	59.1	67.0
Mothers who received postnatal care within two days of delivery for their last birth (%) <sup>@</sup>	41.8	56.9

Sources: \$ Provisional population total, Census 2011; \*Census 2001; @ District level household survey (DLHS)-3, 2007-08.

The 'Improving health status of women and institutional delivery of public reproductive health services in rural West Bengal' Project was implemented in the rural settings in Birbhum district – Mohammed Bazar block, which is one of the most backward blocks of the Birbhum district according to the Birbhum District Development Report, 2008. The general development indicators of this block suggest that the concentration of the marginalized communities is higher in this block compared to the district average on one hand and the literacy rates among them are lower than literacy rates of marginalized



population in the district as a whole on the other (not shown in the Table). The percentage of institutional delivery was also substantially lower in the block compared to the district as a whole. The block was selected randomly from three least developed blocks (human development index value less than 0.40 according to Birhum District Development Report, 2008), namely, Illambazar, Murarai-II and Mohammed Bazar.

Two village *panchayets*, namely, *Kapistha* and *Puratangram*, which are about 16 kilometers apart physically, were purposively selected to avoid statistical contamination during intervention since it was planned to intervene regarding awareness generation on preventive healthcare and health behaviour and, provide referral services in selected villages in one of the *panchayet*. Then three villages from each *panchayet* were selected through probability proportional to size (PPS) sampling technique so that the targeted sample size of 1200-1300 women (combining both the *panchayets*) are met. The three selected villages of *Kapistha panchayet* were chosen as *intervention villages* as the rural health care providers (RHCPs)<sup>1</sup> of this *panchayet* as well as the local level elected political representatives were found to be very willing and enthusiastic about the idea of the project. The villages of *Puratangram panchayet* were served as *control villages*. However, intervention and control villages are comparable in absence of intra-block variations in terms of socio-demographic characteristics of the residents as observed in almost all districts of West Bengal.

#### **1.4 Healthcare availability in the selected villages**

Functional sub-centres, which mainly provide ANC, child immunization services and treatment for minor ailments, exist in the selected villages of Intervention GP (border area of WB & Jharkhand). PHC is located about 5 Km apart, open from 9:30 am to 2 pm from Monday to Friday. 1 doctor, 1 pharmacist, 2 nurses are in position. Pharmacist stays in the quarter and provides service in the evening also, if somebody comes with minor injury or minor ailment. PHC also has bed (but not functional) since people prefer to go to District Hospital (about 15 Km apart) or private nursing homes even bypassing BPHC (about 6 Kms) for delivery or any other ‘perceived’ major health problem. However, BPHC consists of 5 doctors and beds and is open round the clock. However, unqualified providers are the first point of contact.

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<sup>1</sup> Liver Foundation, West Bengal (LFWB) supported by Bristol Myers Squibb Foundation (BMSF) in 2007 launched Rural Health Care Provider’s (RHCP) Training Programme to build the capacity of RMPs so that they can serve with proper knowledge and correct information about the pathogenesis and management of emergency care and various diseases.

Similarly, in the selected villages of Control GP (4 km inside from the road Md. Bazar & Saithia block) it was observed that sub-centres are functional and provide similar sorts of services. PHC is located about 3 Km apart, open from 9:30 am to 3 pm from Monday to Friday. 1 doctor, 1 pharmacist, 1 nurse are in position. Pharmacist stays in the quarter and provide service in the evening also, if somebody comes with minor injury or minor ailment. PHC also has bed (but not functional) since people generally prefer to go straight to the District Hospital even bypassing BPHC for delivery or any other ‘perceived’ major health problem. Some people prefer to go to BPHC (about 5 Kms) for minor ailments and then to the District Hospital (about 13 Km apart), if referred. However, unqualified providers may or may not be the first point of contact.

## 1.5 Study design

Quasi-experimental research design, with cross-sectional surveys conducted in control and intervention villages prior to the implementation of intervention activities (baseline) and at its conclusion (endline), was used to evaluate the outcome (effect) of intervention activity.

Respondents i.e. women of 13-49 age-group for the baseline survey were identified through a rapid household listing in the study villages, and all eligible women were invited to participate in the survey. The baseline survey was conducted between July 2010 and September, 2010. At the endline, which was conducted during April, 2011 and May, 2011, the household listing was updated and an effort was made to track as many baseline respondents as possible. A team of 10 investigators and 2 supervisors (5 investigators and 1 supervisor in each *panchayet*) was engaged in household listing and data collection. During houselisting, information regarding head of the household and the names of the usual women residents who met the eligibility criteria (age group of 13-49) regardless of marital status were collected. Besides, whether any listed women had given birth during three years preceding the survey was also noted.

A structured questionnaire was prepared by the Institute of Development Studies Kolkata (IDSK). The questionnaire was translated into Bengali language with appropriate local dialect with the help of local level healthcare providers. Draft questionnaires were pilot-tested with 78 eligible women in two villages that were not part of the study (one each in each study *panchayet*) but adjacent to the study villages, and necessary modifications made.

In order to track the extent of women’s exposure to the intervention and assess the intensity and breadth of their participation in intervention activities, a system of monitoring

was adopted by maintaining a registrar indicating date of visits and the component of the intervention.

To ensure the quality of data collection, field supervisors regularly supervised and monitored the fieldwork, field-edited the completed questionnaires, and carried out spot-checks of interviews, and helped investigators as required. Additionally, the Coordinator of the project himself regularly monitored the collection of data. Data processing for the baseline survey was then carried out at the IDSK. Consistency checks were carried out, and the data cleaned and processed to generate tables.

## 1.6 Response Rates

Refusal rates were negligible both at the baseline and endline, and also in intervention and control villages (Table 1.2). Of note is that about 3-4 percent of women in both intervention and control villages at the baseline and more than 7 percent of women in the control villages at the endline were unavailable for interview because they migrated out of the villages following marriage, temporary out-migration or they went to their marital home for delivery (a custom in rural India). Additionally, a few women in the control villages were found to have died between baseline and endline surveys due to some diseases and accidents (including snake bites).

**Table 1.2: Response rates at baseline and endline surveys**

	<b>Kapistha GP</b>	<b>Puratangram GP</b>
<b>Baseline</b>		
Number of household listed	560	592
Number of women eligible at baseline survey	667	791
Successfully interviewed	631	761
Incapacitated	4	2
Refusal	1	2
Unavailable (seasonal migration)	31	26
Response rate (% of eligible women)	<b>94.6</b>	<b>96.2</b>
<b>Endline</b>		
Number of household listed	556	571
Number of women eligible at endline survey	666	779
Successfully interviewed	656	718
Incapacitated	3	1
Refusal	1	2
Unavailable (seasonal migration and death)	6	58
Response rate (% of eligible women)	<b>98.5</b>	<b>92.2</b>

At the baseline, 667 and 791 eligible women were identified in Kapistha and Puratangram *panchayets* respectively. Of those, 631 and 761 women in Kapistha and Puratangram *panchayets*, respectively, were interviewed. The response rates at the baseline were slightly higher in the control villages compared to the intervention villages (96.2 percent in control villages against 94.6 percent in the intervention villages). At the endline, 666 and 779 eligible women were identified in Kapistha and Puratangram *panchayets* respectively. Of those, 656 and 718 women in Kapistha and Puratangram *panchayets*, respectively, were interviewed. The response rates at the endline were higher in the intervention villages compared to the control villages.

While the study was designed as two cross-sectional surveys (one at baseline and one at endline), it was also intended to capture longitudinal changes. In order to do so, necessary permission was obtained from the baseline respondents to contact them again at the endline. Of the 656 respondents interviewed at the baseline in the intervention villages, a larger proportion of women were interviewed at the endline compared to the control villages (95 percent versus 85 percent) (see Table 1.3). Reasons for loss to follow-up included women who migrated out of the project villages due to marriage or in search of economic livelihood or who went to natal home for delivery.

**Table1.3: Follow-up rate**

	<b>Kapistha GP</b>	<b>Puratangram GP</b>
Number of women interviewed at baseline	631	761
Number of women available for the entire intervention programme	607	Not Applicable
Number of women interviewed at endline (who were interviewed at baseline)	596	667
<b>Follow-up rate (in %)</b>	<b>94.5</b>	<b>87.6</b>

## 1.7 Limitations

This study has some limitations that may affect its ability to fully assess the effects of the intervention. First, intervention and control villages in both sites were not strictly comparable in terms of socio-demographic characteristics and access to public capital. For example, the proportion of adolescent was higher in the control villages compared to the intervention villages (29 percent in the control villages as against 21 percent in the

intervention villages) (see Table 1.1). Similarly, the proportion of forward caste Hindu respondents was 22 percentage points higher in the intervention villages, while the proportion of Muslims was found to be about 20 percentage points higher in the control villages compared to the intervention villages. Differences between the two sites were also found in accessing safe drinking water and in standard of living. We note that these differences make comparisons difficult.

Second, the intervention villages had received some amount of programmatic inputs on HIV/AIDS awareness generation programme of State AIDS Control Department. Undoubtedly, a community that has received some programmatic inputs on reproductive health awareness generation programme is not ideal for assessing the effects of a similar sort of intervention. This further compromised the comparability of intervention and control villages.

Third, frequent movements of women during harvesting and sowing seasons to the neighbouring districts in search of livelihood or otherwise diminished their exposure to different components of the intervention. We also note the possibility of this weakening the effects of the intervention on some of the expected outcomes, including women's health practices, since the intervention could not influence the family or health services outside the project sites. For example, it is possible that women who wanted to have institutional delivery might have gone back to their natal home or temporarily out-migrated elsewhere (outside the project site) where obstetric care facility was not easily accessible.

Fourth, we acknowledge that the duration of intervention was of very short period of time since the duration of the entire project was only for two years. For this reason, it is very hard to bring about some changes in the 'culture' of health practices which lasts in the community for a sufficiently long period of time. For example, taking bath in pond water in rural Bengal is an age old customary practice, which could continue even after an intervention campaign of six months duration.

Lastly, the supply-side factors which are primarily 'public goods' were not taken into account in the intervention programme. For example, even if we emphasize the use of drinking water from tubewell or not to take bath in pond water etc., it actually depends on the availability of tubewells in sufficient number in a village. Similarly, if the road condition is not good and the availability of transport is poor, then people will be less willing to go to the public facility even if it is available nearby. Although the health awareness generation and check-up workshops were facilitated, no medicine was supplied as it was not permitted in the project and this possibly reduced the efficacy of the intervention to some extent.

## **1.8 Structure of the report**

The report is structured as follows. Drawing data from the baseline survey, the social and health situation of women in the project villages has been presented in Chapter 2. Chapter 3 describes the various steps in designing and implementing intervention activities. An attempt has been made in Chapter 4 to examine the extent to which exposure to intervention influenced women's health awareness, change in the reporting of ailments and treatment seeking behaviour. Chapter 5 summarizes the main findings of the study, and highlights the lessons learnt while implementing the entire programme.

## CHAPTER 2

# GENERAL AND REPRODUCTIVE HEALTH SITUATION OF RURAL WOMEN



## Chapter 2

# General and Reproductive Health Situation of Rural Women

Drawing data from the baseline survey, this chapter sets the context in which intervention activities were implemented. It presents the background characteristics of the respondents in both the sites of the study population, and profiles the interaction with the community health workers. It discusses the level of awareness about the symptoms of general and reproductive illnesses, reporting of these illnesses and associated treatment seeking pattern among the respondents in the study population of both the GPs. It also tries to explore the reasons for not seeking treatment for these ailments among those who suffered from these ailments in both the study sites.

## 2.1 Background Characteristics

The socio-demographic characteristics of the respondents are summarized in the Table 2.1 showing some similarities and dissimilarities between the two study sites. In both sites, more than 4 out of 10 women were more than 30 years of age. However, the proportion of adolescents is more in the intervention villages compared to the control villages. At the intervention site, more than 70 percent of the respondents belong to marginalized community comprising 26 percent SC, 25 percent ST and 20 percent from minority community. However in the control villages, 93 percent of the respondents belong to marginalized community comprising 40 percent minority community, 39 percent SC and about 15 percent ST. About half of the respondents of both the GPs are illiterate, while less than one-fifth has attained more than 8 years of schooling. It has been observed that 60 percent of women on an average have not worked in any wage earning sector activities. The proportion of skilled labor was higher (more than 34 percent) among the women in the intervention villages compared to the control villages (only 6 percent). Media exposure of the respondent was represented by reading newspaper, listening to radio and watching television regularly or once in a week. Although about 40 percent women watch television regularly or once in a week in the study villages, very low proportions read newspaper or listen to radio. In conformity with all India family structure, about 70 percent of the households are nuclear in nature at both the sites. More than two-third of the respondents are currently married at both the sites, while the proportion of never-married women is higher in the control villages compared to the intervention villages. The access to safe drinking water is higher in the control villages (98



percent) compared to the intervention villages (70 percent). The use of safe sanitation is abysmally low in both the sites on an average (10 percent only). Female headed households comprise only about 10 percent of the households. More than 60 percent of the households in the study villages belong to low standard of living category<sup>2</sup>. The proportions of affluent section in the intervention villages (about 15 percent) are more compared to that of the control villages (9 percent).

**Table 2.1: Background characteristics of the women across the GPs**

<b>Background characteristics</b>	<b>Intervention (%)</b>	<b>Control (%)</b>
<b>Respondents Age (years)</b>		
<20	21.2	29.0
20-30	35.8	30.1
30+	42.9	40.9
<b>Religion/Caste</b>		
Forward caste Hindu	29.0	7.0
SC Hindu	26.1	38.8
ST Hindu	24.9	14.6
Muslims/others	20.0	39.7
<b>Maternal Education (no of years)</b>		
None	47.9	44.3
Up to 5	14.7	19.7
6 to 8	18.1	19.5
9 and above	19.3	16.5
<b>Work Status of Respondent</b>		
Not Working	59.6	64.4
Working as agricultural labour	0.3	18.1
Working as other unskilled labour	3.3	10.4
Working as skilled labour	34.4	6.3
Working in manufacturing/ secondary/tertiary activities	2.4	0.8
<b>Read Newspaper</b>		
Almost every day/At least once a week	7.7	4.4
Less than once a week/never	92.3	95.6
<b>Listen Radio</b>		
Almost every day/At least once a week	8.4	4.7
Less than once a week/never	91.6	95.3
<b>Watch Television</b>		
Almost every day/At least once a week	35.3	39.2
Less than once a week/never	64.7	60.8
<b>Type of Family</b>		
Nuclear	75.4	68.7
Extended	24.6	31.3
<b>Marital Status</b>		

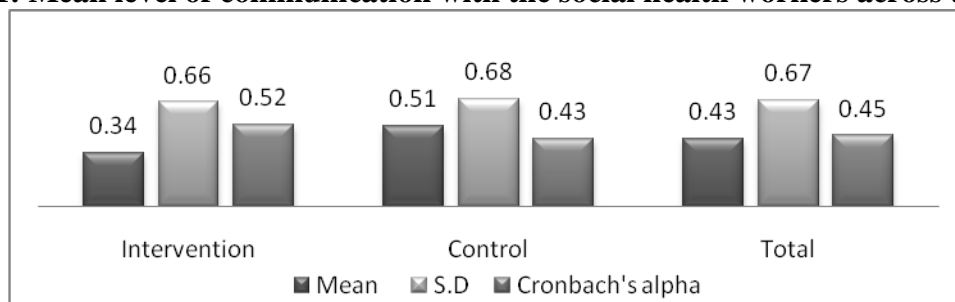
<sup>2</sup> The details of construction of Standard of Living Index (SLI) have been given in Appendix B at the end of the report.

Never married	13.5	17.9
Currently married/living together	81.8	76.3
Widowed	2.9	3.7
Separated/divorced	1.9	2.1
<b>Potable drinking water</b>		
Unsafe	30.1	2.2
Safe	69.9	97.8
<b>Access to sanitation facility</b>		
Unsafe	87.2	91.3
Safe	12.8	8.7
<b>Sex of the Household</b>		
Male	92.9	90.0
Female	7.1	10.0
<b>Standard of Living index</b>		
Low	64.0	61.1
Medium	20.4	29.8
High	15.5	9.1
<b>Total number of observations</b>	<b>631</b>	<b>761</b>

## 2.2 Level of communication with community health workers (N: 631 in the intervention & 761 in the control)

The level of interaction with community health workers, namely, Auxiliary Nurse Midwives (ANM), Accredited Social Health Activists (ASHA), Anganwari Workers (AWW) has been explored in order to better understand the level of communication regarding health matters. Findings presented in fig2.1 correspond to the extent of social interaction with health care providers among respondents of underdeveloped villages. In fact, it is difficult to expect a

**Fig 2.1: Mean level of communication with the social health workers across the GPs**



better communication between health care providers and respondents. The communication index is framed by summing up the responses in meetings with ANM, AWW& ASHA workers by the respondents in both the sites during 3 months preceding the survey. Score 1 is assigned if women did meet with these health workers; 0 otherwise, so that the scale ranges from 0 to 3. The mean values of the scale indicate that the level of such communication with the social health workers was minimal at both these sites (the mean values are 0.34 among

the respondents of intervention villages and 0.51 among the respondents in the control villages) (Cronbach's alphas are 0.52 at the intervention and 0.43 at the control).

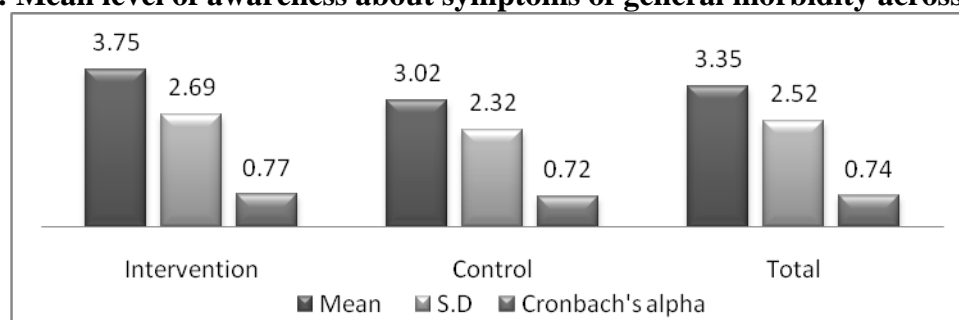
## **A. Level of health awareness**

This section explored the level of awareness about symptoms of general illnesses, gynecological (menstrual, RTI/STI and abnormal vaginal discharge) morbidity and obstetric (antenatal, delivery and post-partum) complications among the respondents in the study villages. To understand the level of awareness, awareness indices have been formed for each of the above type of ailments, namely, *index of awareness of general morbidity*, *index of awareness of gynecological morbidity*, *index of awareness of obstetric morbidity*.

### **2.3 Level of awareness about symptoms of general illnesses (N: 631 in the intervention & 761 in the control)**

To capture the level of awareness about symptoms of general ailments among the respondents in the study villages, information was collected about correct knowledge of signs and symptoms of 16 common illnesses such as malaria, tuberculosis, diarrhea, pneumonia, asthma, jaundice, heart problem, diabetes, nephritis, gastritis, anemia, stroke, breast cancer, gout, goiter, filaria. An *index of awareness of general morbidity* is framed: if a respondent answered 2 symptoms of each of the ailments correctly then 1 score has been assigned, 0 otherwise. Thus, the scale ranges from 0 to 16. The mean score indicates that the correct

**Fig 2.2: Mean level of awareness about symptoms of general morbidity across the GPs**

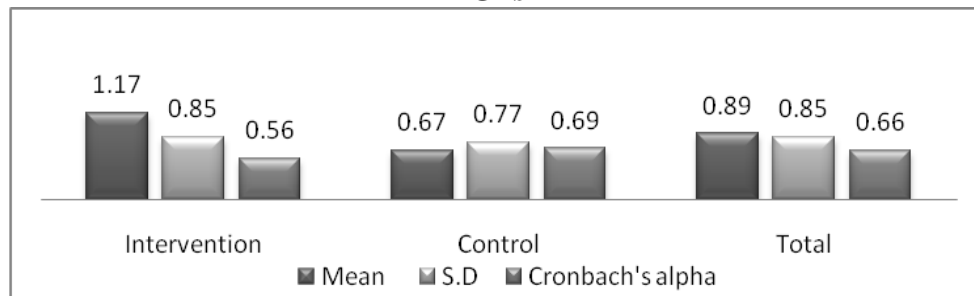


knowledge about symptoms of these illnesses were abysmally poor among the respondents of both the GPs. It has been found that the majority of the respondents in both the sites were not correctly aware about at least two signs and symptoms of general health ailments (mean value is 3.75 among the respondents in the intervention villages and 3.02 among the respondents in the control villages) (Cronbach's alphas are 0.77 at the intervention and 0.72 at the control).

## 2.4 Level of awareness about symptoms of gynecological morbidity (N: 631 in the intervention & 761 in the control)

Fig.2.3 depicts the level of awareness about symptoms of gynecological morbidity, reproductive tract infections/sexually transmitted infections (RTI/STI) and their spread among the respondents in the study population. To capture such level of awareness information was collected about correct knowledge of signs and symptoms of 3 main gynecological problems such as menstrual, RTI/STI and abnormal vaginal discharge. An *index of awareness of gynecological morbidity* is framed: if a respondent answered 2 symptoms of each of the ailments correctly then 1 score has been assigned, 0 otherwise.

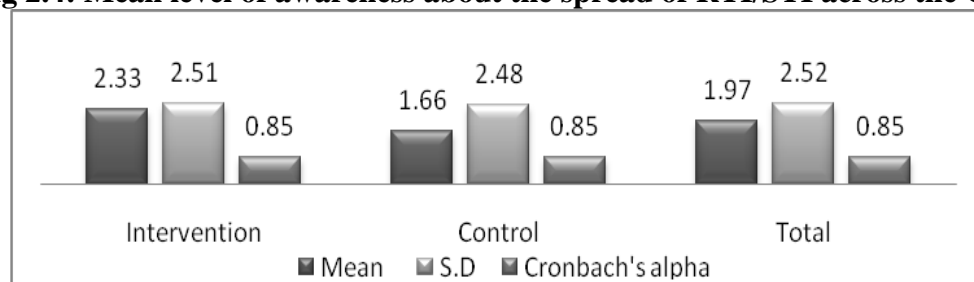
**Fig 2.3: Mean level of awareness about symptoms of gynecological morbidity across the GPs**



Thus for the 3 gynecological problems, the score ranges from 0 to 3. The mean score among the respondents in the intervention villages was 1.17, while the mean value was found to be 0.67 among the respondents of control villages –this highlights the fact that the respondents at both the sites have considerably less knowledge about the correct signs and symptoms of gynecological ailments. (Cronbach's alphas are 0.56 at the intervention and 0.69 at the control).

Fig. 2.4 represents *an index of awareness about the spread of RTI/STI*. To capture such awareness information was collected on the following components: whether RTI/STI is a communicable infection, whether it can be cured and ways to cure such infections and whether these infections spread from husband to wife, if the husband suffers from RTI/STI.

**Fig 2.4: Mean level of awareness about the spread of RTI/STI across the GPs**

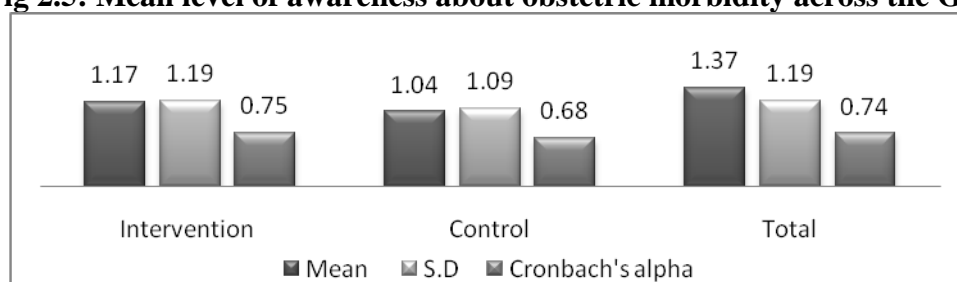


Index of awareness about the spread of RTI/STI is framed by summing up all the components stated above and the score ranges from 0 to 8. The mean score among the respondents in the intervention village is 2.33 and in the control village is 1.66. Although the level of awareness about the spread of RTI/STI is higher in the intervention village compared to the control site, the breadth of awareness is low in general in both the study sites. (Cronbach's alphas are 0.85 for both intervention and control)

## 2.5 Level of awareness about symptoms of obstetric morbidity (N: 631 in the intervention & 761 in the control)

The awareness about the social and medical causes associated with pregnancy, delivery and post-delivery complications is very important in order to identify the symptoms and seeking care. Keeping these in mind, information was collected about the knowledge of danger signs and symptoms of antenatal, delivery and post-partum morbidity among respondents of study villages. An *index of awareness of obstetric morbidity* is framed: if a respondent answered 2 symptoms of each of the ailments correctly then 1 score has been assigned, 0 otherwise.

**Fig 2.5: Mean level of awareness about obstetric morbidity across the GPs**



Thus the score ranges from 0 to 3. Fig. 2.4 depicts the fact the respondents at both the study sites were not very significantly aware about the danger signs and symptoms of obstetric complications (mean score among the respondents of the intervention villages is 1.17 & among the respondents in the control villages is 1.04) (Cronbach's alphas are 0.75 at the intervention and 0.68 at the control).

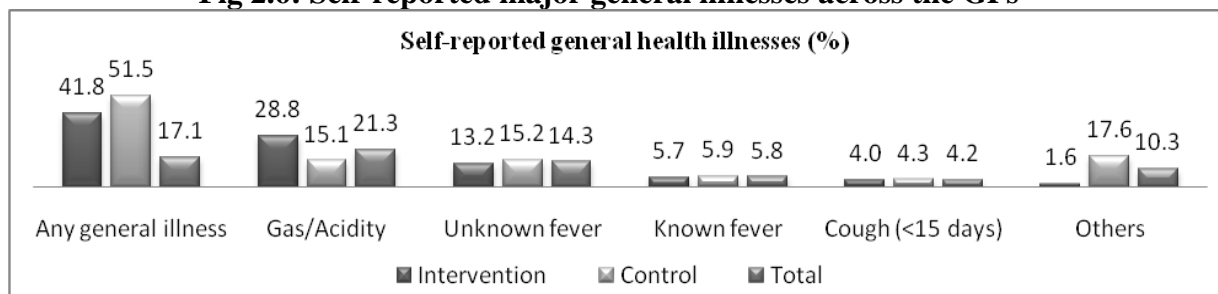
## **B. Self-reported general, gynecological & obstetric morbidity**

This part depicts the reporting of major general illnesses (malaria, tuberculosis, diarrhea etc.), gynecological (menstrual, RTI/STI and abnormal vaginal discharge) problems and obstetric (antenatal, delivery and post-partum) complications among the respondents in the study population during 3 months preceding the survey. It may be noted that women of the reproductive age-group not only suffer from the reproductive problems (gynecological and obstetric) but from the common general illnesses also.

### **2.6 Self-reported general illnesses (N: 631 in the intervention & 761 in the control)**

Fig. 2.5 shows the prevalence of self-reported general illnesses among the respondents in both the study sites during 3 months preceding the survey. More than half of the respondents at the control site (51.5 percent) suffered from any general ailments. However, at the intervention site more than 4 out of 10 women (41.8 percent) suffered from any general

**Fig 2.6: Self-reported major general illnesses across the GPs**

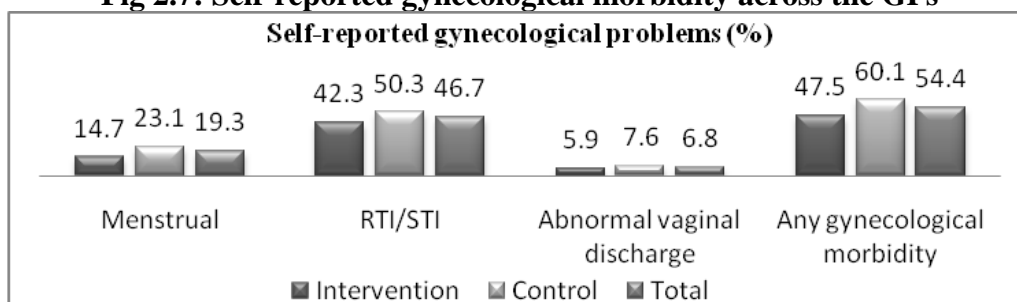


illnesses. The most prevalent general ailment was found to be gas/acidity (28.8 percent at the intervention and 15 percent at the control) among the respondents. On an average 14.3 percent of the women suffer from unknown fever. Other self-reported ailments include fever with known causes (5.7 percent at the intervention and 5.9 percent at the control), cough (4.0 percent at the intervention and 4.3 percent at the control) and other illness not included in the questionnaire.

### **2.7 Self-reported gynecological morbidity (N: 631 in the intervention & 761 in the control)**

Information on gynecological (menstrual, RTI/STI and abdominal vaginal discharge) morbidity among the respondents in both the sites of the study villages in rural Birbhum shows that more women at the control site (60 percent) suffered from any gynecological

**Fig 2.7: Self-reported gynecological morbidity across the GPs**

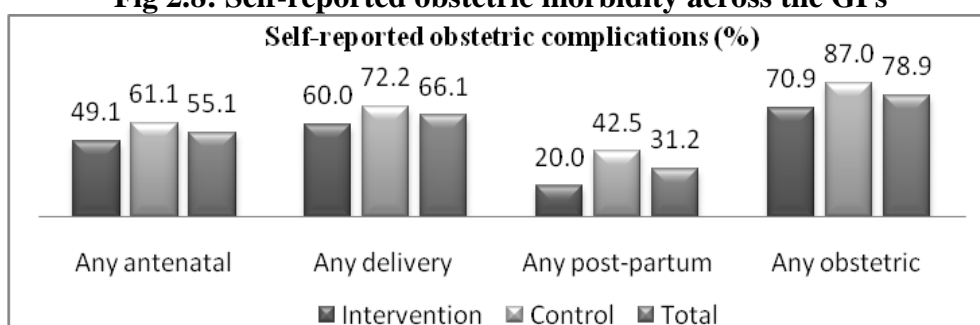


morbidity compared to the intervention site (47.5 percent) during 3 months preceding the survey. Among 761 women at the control site more than half of them reported symptoms of RTI/STI. However, at the intervention site such prevalence was observed among 42.3 percent of the respondents. The menstrual problem was found among 14.7 percent of the respondents in the intervention villages and 23.1 percent of the women in the control villages. However, on an average only 6.8 percent of the respondents reported abnormal vaginal discharge.

## 2.8 Self-reported obstetric morbidity (one year preceding the survey; N: 55 in the intervention & 54 in the control)

Information on symptoms of pregnancy, delivery and post-delivery complications was collected among the respondents who delivered within one year preceding the survey. Fig 2.7 indicates the self-reported symptom of obstetric (antenatal, delivery and post-partum) complications among respondents at both the sites of study population. Among 55 respondents at the intervention site 70.9 percent have reported any symptom of obstetric

**Fig 2.8: Self-reported obstetric morbidity across the GPs**



complication. However, at the control site out of 54 pregnant women 87 percent reported similar complications. On an average more than half of the respondents reported any symptom of antenatal complication (49.1 percent respondents at the intervention site and 61.1 percent at the control site). Reporting of any symptom of delivery complication was very high in both the sites (60.0 percent at the intervention and 72.2 percent at the control).

However, fewer numbers of respondents have reported any symptom of post-partum complication, only 2 out of 10 women (20 percent) in the intervention and more than 4 out of 10 women (42.5 percent) in the control area.

### **C. Treatment seeking pattern among the respondents who reported symptoms of general, gynecological and obstetric morbidity.**

This part attempts to investigate the treatment seeking pattern among the respondents who have reported symptoms of general illnesses, gynecological (menstrual, RTI/STI and abnormal vaginal discharge) and obstetric (antenatal, delivery and post-partum) complications at both the sites of study population. The treatment seeking behavior among the respondents has been classified in 4 major categories as follows:

- (i) No treatment: Respondents who did not avail of any formal treatment for their illness (es).
- (ii) From public sources: Respondents who sought treatment from government hospitals, clinics, dispensaries (either allopathic or Indian system of medicine).
- (iii) From private sources: Respondents who utilized the private qualified sources such as private clinics, hospitals, nursing homes (either allopathic or Indian system of medicine)
- (iv) From private-unqualified sources: Respondents who sought private-unqualified doctors (quacks), untrained dai, medicine shops, *ojha* etc.

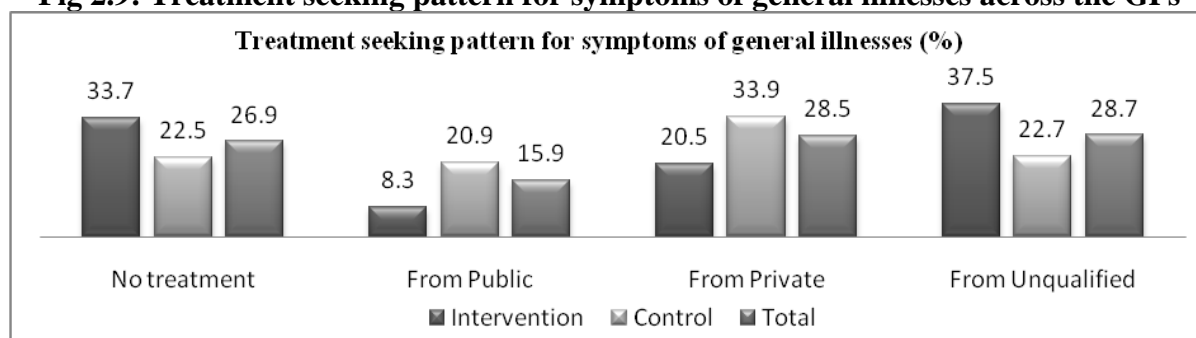
Additionally, an attempt has been made to elicit the reasons for not availing any formal treatment for the aforesaid morbidities and also to find out reasons for not using public facilities for treatment seeking.

### **2.9 Treatment seeking pattern for symptoms of general illnesses (N: 264 in the intervention & 392 in the control)**

Although more than half of the respondents in the control site reported symptoms of general illnesses (51.5 percent), 22.5 percent among them did not seek any formal treatment for such ailments. Among those who sought any treatment 3 out of 10 women (33.9 percent) consulted private practitioners, while 22.7 percent went to private-unqualified providers for seeking treatment in the control site. Only one-fifth of the respondents in the control site utilized public facilities for treatment of general ailments. Although more than 4 out of 10 women in the intervention site reported symptoms of general illnesses, 33.7 percent among them did not



**Fig 2.9: Treatment seeking pattern for symptoms of general illnesses across the GPs**

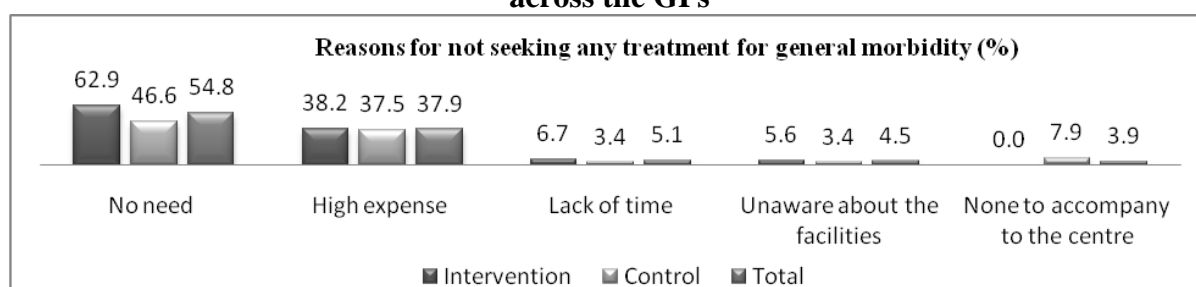


seek any treatment for such problems. A majority (37.5 percent) sought treatment from private-unqualified source and few (8.3 percent) went to public source in the intervention site. One-fifth of women (20.5 percent) consulted private providers for general illnesses in the intervention site.

## 2.10 Major reasons for not seeking any treatment for symptoms of general illnesses (N: 89 in the intervention & 88 in the control)

The above discussion has pointed out that although substantial proportion of respondents reported different symptoms of general ailments, 177 respondents in the study villages did not avail of any treatment. Fig. 2.9 depicts the reasons for seeking any treatment for their ailments across the GPs. A majority of the respondents did not feel the necessity to seek treatment for such illnesses (62.9 percent in the intervention and 46.6 percent in the control).

**Fig 2.10: Major reasons for not seeking any treatment for symptoms of general illnesses across the GPs**

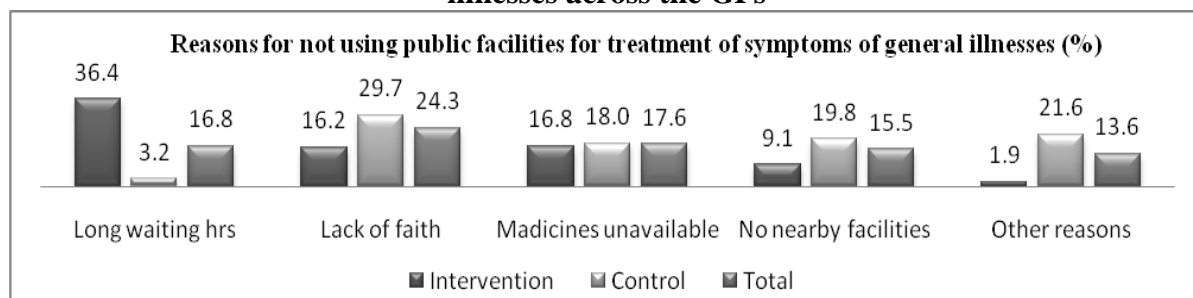


On an average 37.9 percent of the respondents did not avail any treatment as they perceived the cost of treatment would be high. Other reasons also include lack of time to avail service (6.7 percent in the intervention and 3.4 percent in the control), unaware about the facilities (5.6 percent in the intervention and 3.4 percent in the control) and lack of accompanying person (7.9 percent in the control) in seeking treatment.

## 2.11 Major reasons for not utilizing public facilities for treatment of symptoms of general illnesses (N: 154 in the intervention & 222 in the control)

Although majority of the respondents in the intervention village did not utilize public facilities due to long waiting hours required (36.4 percent), only 3.2 percent of the respondents cited this reason in the control group. Besides, lack of faith (16.2 percent),

**Fig 2.11: Major reasons for not utilizing public facilities for symptoms of general illnesses across the GPs**

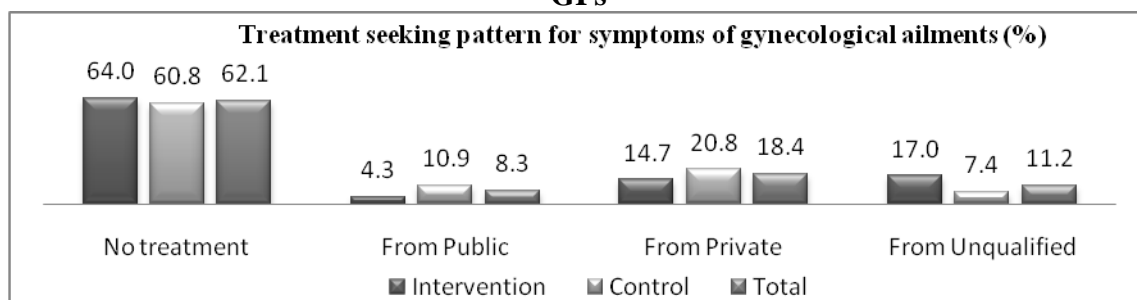


unavailability of medicines (16.8 percent) and unavailability of nearby public facilities (9.1 percent) were found to be other important reasons in the intervention villages in this regard. Fig. 2.10 also depicts the reasons for not seeking treatment from public facility in the control villages. A majority of them (29.7 percent) did not avail due to lack of faith and other reasons which include unavailability of medicines (18 percent) and other different reasons not mentioned specifically (21.6 percent).

## 2.12 Treatment seeking pattern for symptoms of gynecological problems (N: 300 in the intervention & 457 in the control)

Fig.2.11 depicts the treatment seeking behavior among the proportion of respondents who reported symptoms of gynecological morbidity at both sites of study population. It may be noted that a substantial part of the respondents (64 percent in the intervention and 60.8

**Fig 2.12: Treatment seeking pattern for symptoms of gynecological ailments across the GPs**

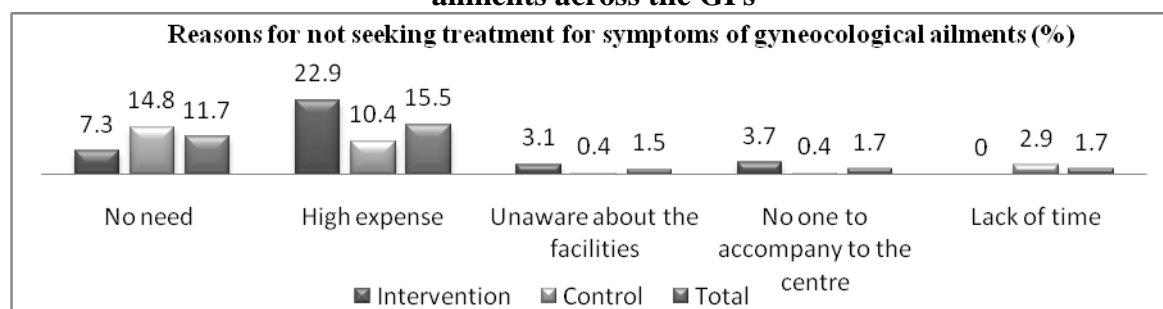


percent in the control) did not seek any treatment for the symptoms of gynecological ailments. Unfortunately, a very low proportion of women reported such problems and availed of public sources (4.3 percent in the intervention and 10.9 percent in the control). At the intervention site, 14.7 percent consulted private sources, while 17 percent availed private-unqualified sources in seeking treatment. However, in the control site more than 2 out of 10 women (20.8 percent) consulted private providers, while 7.4 percent sought treatment from private-unqualified sources.

### 2.13 Major reasons for not seeking any treatment for symptoms of gynecological ailments (N: 192 in the intervention & 278 in the control)

Fig.2.12 reveals the reasons for not seeking any treatment among them who reported symptoms of gynecological morbidity (menstrual, RTI/STI and abnormal vaginal discharge) in the study sites. More than one-fifth of respondents (22.9 percent) in the intervention villages did not seek treatment due to unaffordability. Among those who did not seek

**Fig 2.13: Major reasons for not seeking any treatment for symptoms of gynecological ailments across the GPs**

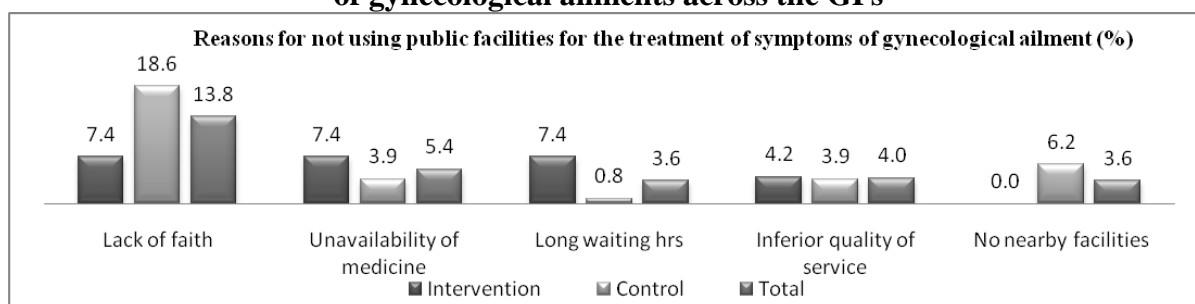


treatment for such morbidities in the control villages 7.3 percent reported that treatment seeking was unnecessary for these symptoms, while 10.4 percent did not avail treatment due to higher perceived cost. A minority of respondents in the control site revealed lack of time as a reason for not seeking any treatment (2.9 percent).

### 2.14 Major reasons for not utilizing public facilities for treatment of symptoms of gynecological ailments (N: 95 in the intervention & 129 in the control)

It has been observed that utilization of public facilities for the treatment of symptoms of gynecological ailments was significantly low among respondents in both the study sites. Fig.2.13 depicts the reasons for not seeking care from government providers. Majority of women at the control site (18.6 percent) expressed lack of faith in the treatment provided by

**Fig 2.14: Major reasons for not utilizing public facilities for the treatment of symptoms of gynecological ailments across the GPs**



public facilities. Other reasons cited at the control site include distant public facilities (6.2 percent), unavailability of medicines (3.9 percent), poor quality of services (4.2 percent) and long waiting hours (0.8 percent). At the intervention site, the significant reasons for not seeking care from public facilities include lack of faith in public source (7.4 percent), unavailability of medicines (7.4 percent), long waiting hours (7.4 percent) and poor quality of services (4.2 percent).

## 2.15 Extent of antenatal care (ANC)

Table 2.16 depicts the components of ANC check-ups among the currently married respondents who delivered a live-birth/still-birth one year preceding the survey in the study population. Although more than 9 out of 10 respondents received antenatal check-up, full ANC check-ups as measured by first visit within three months of pregnancy, at least four visits during the pregnancy period, consumption of all IFA tablets and receiving at least two tetanus toxoid injections, was appallingly low among the respondents of both the sites. It may be noted that only 5.5 percent of respondents obtained full ANC check-ups in the intervention site, while 9.3 percent of respondents received full ANC check-ups in the control site. The components such as examination of breast during ANC check-up, x-ray, internal examination, examination of abdomen are very low among the respondents in the study population. It may be noted from the table that none of the respondents at both the sites have had comprehensive ANC check-ups, which includes receipt of all the components of ANC check-ups in the table given below.

**Table 2.2: Components of ANC check-ups across the GPs (N:102)**

Components of antenatal care	Intervention	Control	Total
First ANC visit within 3 months of pregnancy	32.0	67.3	50.0
At least 4 visits during pregnancy	14.0	38.5	26.5
Weight measured	96.0	92.3	94.1
Height measured	38.0	31.0	34.3
Blood pressure checked	86.0	85.0	85.3
Blood examined	66.0	54.0	60.0

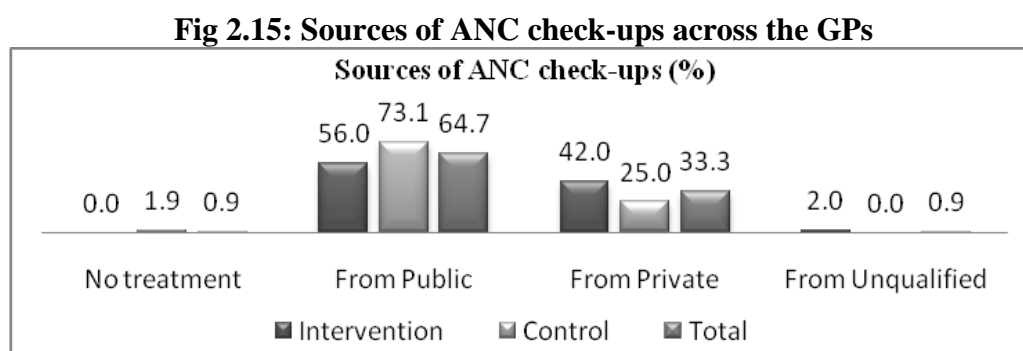
Urine examined	72.0	70.0	71.0
Abdominal examined	40.0	35.0	37.3
All IFA consumed	62.0	39.0	51.0
Received at least 2 tetanus injection	89.1	89.0	89.0
Received any antenatal check-up	91.0	94.4	93.0
Received full antenatal check-ups*	5.5	9.3	7.3
Received comprehensive antenatal check-up**	0.0	0.0	0.0
<b>Total cases</b>	<b>50</b>	<b>52</b>	<b>102</b>

\*Full ANC check-up includes first visit within 3 months of pregnancy, at least 4 check-ups, consumption of all IFA tablets and received at least 2 tetanus toxoid injections.

\*\*Comprehensive ANC check-up includes all the components of the above table.

## 2.16 Sources of antenatal care in the study villages (one year preceding the survey; N: 50 in the intervention & 52 in the control)

From fig.2.14, it is quite encouraging to observe that a majority of the respondents at both the study sites did avail of antenatal services from the public sources during pregnancy (56 percent in the intervention and 73.1 percent in the control). It was also found that more than 4

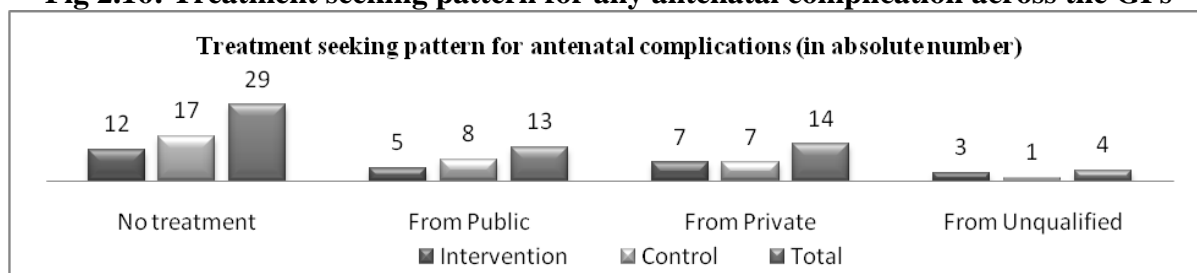


out of 10 women in the intervention site sought private services (42 percent), while one-fourth of women availed antenatal care services from private sources in the control area. It is to be noted that among 105 respondents in the intervention site only 3 women did not seek any antenatal care services.

## 2.17 Treatment seeking pattern for pregnancy complications (one year preceding the survey; N: 27 in the intervention & 33 in the control)

Fig 2.18 represents the treatment seeking pattern among the respondents who had pregnancy complication in both the sites of study population. Among 27 respondents in the intervention site 12 of them did not seek any treatment for pregnancy complications and majority of them (7 women) availed private sources, 5 of them sought public services and 3 of them consulted private-unqualified sources. At control site, 17 out of 33 pregnant women did not seek any

**Fig 2.16: Treatment seeking pattern for any antenatal complication across the GPs**

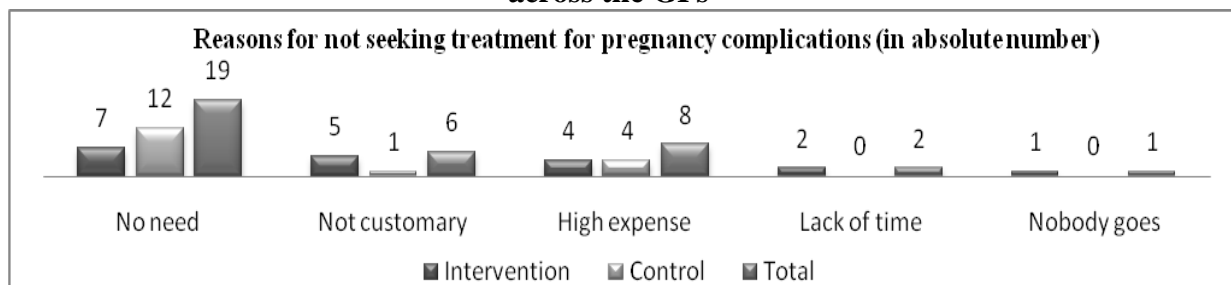


treatment for pregnancy complication. Among 16 women who sought any treatment, 8 of them sought treatment from public sources, while 7 of them consulted private sources.

### 2.18 Major reasons for not seeking any treatment for pregnancy complications (one year preceding the survey; N: 12 in the intervention & 17 in the control)

Fig.2.16 depicts the reasons for not seeking any treatment for pregnancy complications among the respondents at both the sites. A majority of them perceived that seeking treatment for such complications are unnecessary (7 in the intervention and 12 in the control). Other

**Fig 2.17: Major reasons for not seeking any treatment for pregnancy complications across the GPs**

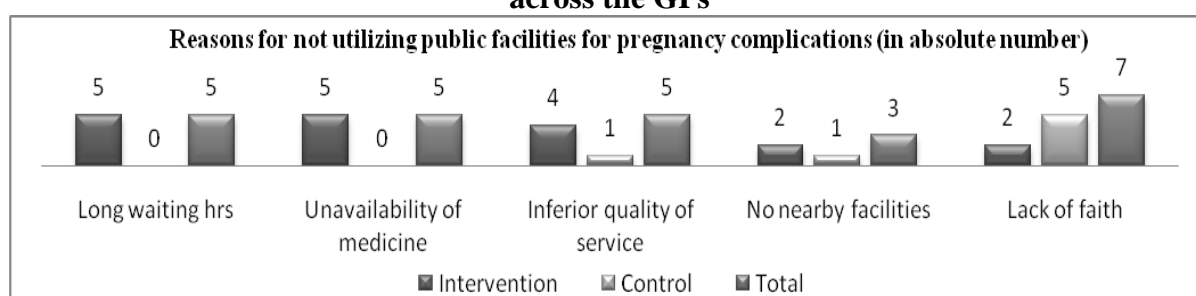


reasons include high cost of such treatment (4 in the intervention and 4 in the control), treatment seeking was not customary (5 in the intervention and 1 in the control), lack of time to avail such facility (2 in the intervention and 2 in the control) etc.

### 2.19 Major reasons for not utilizing public facilities for seeking treatment of pregnancy complications (one year preceding the survey; N: 10 in the intervention & 8 in the control)

Out of 10 women in the intervention group 5 women perceived that waiting time was too long in the public facilities and medicines are often not available, 4 of them felt that the

**Fig 2.18: Major reasons for not utilizing public facilities for pregnancy complications across the GPs**

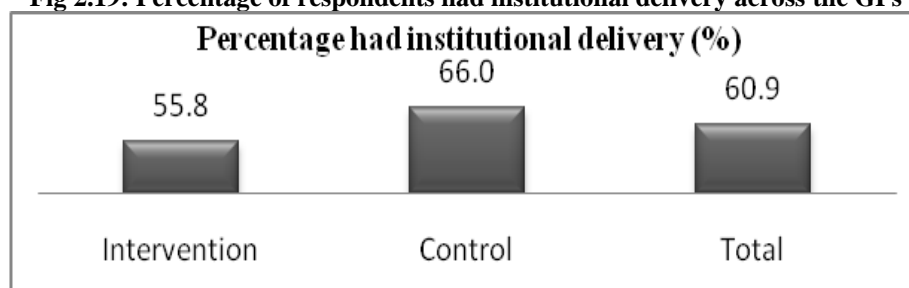


quality of service was poor at the public facilities. In the control group, majority of women (5 out of 8 women) did not have any faith in public facilities.

## 2.20 Percentage of institutional delivery (One year preceding the survey; N: 52 in the intervention and 53 in the control)

Fig. 2.18 depicts the very important fact that out of 52 women in the intervention group who were pregnant during 1 year preceding the survey 29 of them (55.8 percent) had institutional delivery, while the at the control site out of 53 women 35 of them (66 percent) delivered a

**Fig 2.19: Percentage of respondents had institutional delivery across the GPs**



live-birth within an institutional set-up. On an average more than 6 out of 10 women (60.9 percent) had institutional delivery at both the sites of the study population.

## 2.21 Major reasons for not seeking institutional delivery (One year preceding the survey; N: 23 in the intervention & 18 in the control)

Fig.2.19 depicts that out of 23 pregnant women in the intervention group who did not deliver in an institution, 18 perceived that it was not required for them, 14 of them thought that it is a costly affair, 4 reported lack of facilities nearby and 3 women reported lack of proper information about such facilities. In the control site, 18 women did not deliver in an institution as they perceived that it was not required for them (8 women), 2 women reported that it is not customary or unavailability of government facilities nearby.

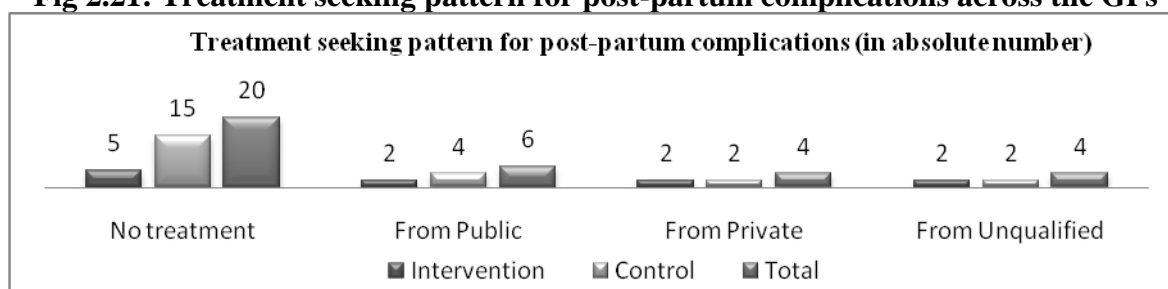
**Fig 2.20: Major reasons for not seeking institutional delivery across the GPs**



## 2.22 Treatment seeking pattern for post-partum complications (One year preceding the survey; N: 11 in the intervention & 23 in the control)

Treatment seeking pattern among the respondents who reported any post-partum complication is depicted in fig. 2.20. A majority of the respondents (5 out of 11) did not seek treatment for post-partum complications at the intervention site. 2 of them availed public facility, 2 consulted private providers and 2 sought treatment from private-unqualified

**Fig 2.21: Treatment seeking pattern for post-partum complications across the GPs**



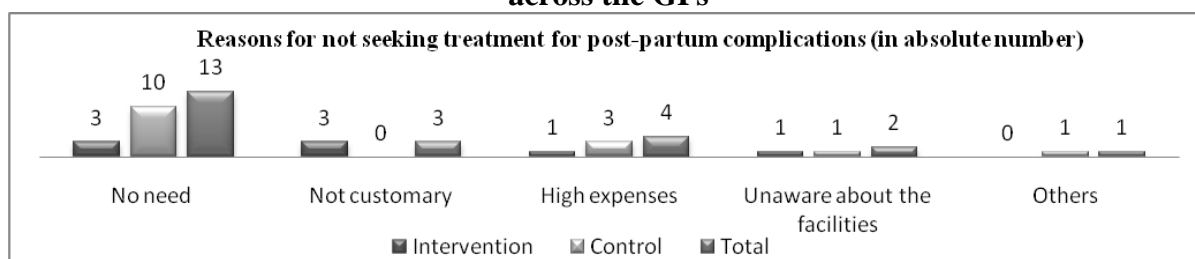
sources in the intervention site. In the control group a higher proportion of respondents did not seek any treatment for such complications (15 out of 23 women). However, the respondents who sought treatment for such complications in the control group, 4 of them availed public facility and 2 women went to private and private-unqualified sources.

## 2.23 Major reasons for not seeking any treatment for post-partum complications (one year preceding the survey; N: 5 in the intervention & 15 in the control)

Out of respondents who did not avail of any treatment for post-partum complications, a majority reported that seeking treatment for such complications was not necessary for them (3 out of 5 women in the intervention and 10 out of 15 women in the control). The other reasons cited by both the groups of respondents include customary reasons, unaffordability etc.



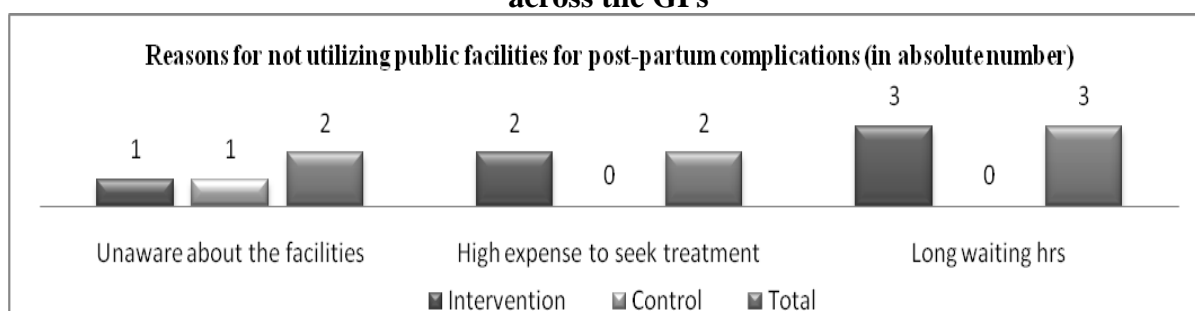
**Fig 2.22: Major reasons for not seeking any treatment for post-partum complications across the GPs**



## 2.24 Reasons for not utilizing public facilities for seeking treatment of post-partum complications (one year preceding the survey; N: 4 in the intervention & 4 in the control)

The reasons for not utilizing public facility for post-partum complications include limited affordability (2 out of 4 women in the intervention group), long hours of waiting time (3 out of 4 women in the intervention group). Additionally, 1 woman each in the intervention and in the control group was unaware of such facilities.

**Fig 2.23: Major reasons for not using public health care for post-partum complication across the GPs**



In brief, the baseline findings show that the respondents in the rural areas of Birbhum district have a low level of awareness regarding general and reproductive morbidities. Data also suggest that although considerable number of women reported symptoms of general and reproductive illnesses in both the sites, they did not avail of any treatment for these complications. Majority of the respondents reported who such ailments consulted private-qualified as well as private-unqualified providers while seeking treatment. It is also clear from the findings that very few women utilized government facilities in seeking treatment for their illnesses. Findings also tried to explore the reasons for not utilizing public facilities for the treatment of such ailments.

## CHAPTER 3

# THE INTERVENTION



## Chapter 3

# The Intervention

This chapter describes the design of the intervention project, the objectives of the intervention and its key components, extent of women's exposure to the intervention, and the challenges faced in implementing the intervention. Data on exposure to the intervention presented in this chapter are primarily drawn from the respondents who were exposed to intervention and also interviewed in the endline survey.

### 3.1 Intervention design and objectives

In the absence of any previous diagnostic study in the study area, the design of the intervention was based on the anecdotal evidences on health awareness, prevalence of morbidity and treatment of ailments and thus the intervention was purely exploratory in nature. After discussions with the local level health care providers and politically elected local representatives of *panchayet*, three general areas for action were identified: first, information provision on general and reproductive health; second, emphasis on preventive aspects of general and reproductive health care and third, facilitate in organizing monthly health information and check-up workshops by the doctors from the district hospital.

The specific objectives of the intervention were to:

- Enhance women's knowledge and awareness of key issues of health care in general and reproductive healthcare in particular.
- Improve women's preventive health behaviour, especially reproductive health behaviour to reduce the reporting of morbidity.
- Improve women's reproductive health practices during pregnancy, delivery and postpartum period.
- Encourage utilization of available public health facilities while seeking treatment for diseases in general and for reproductive morbidities in particular.

### 3.2 Intervention activities

Intervention activities were implemented in three study villages of Kapistha GP. The intervention was launched in November 2010 and concluded in March 2011. The intervention activities were carried out by eight Rural Health Care Providers (RHCPs). Liver Foundation, West Bengal (LFWB), supported by Bristol Myers Squibb Foundation (BMSF), had launched

Rural Health Care Provider's (RHCP) Training Programme in 2007 to build the capacity of Rural Medical Practitioners (RMPs) so that they could serve with proper knowledge and correct information about the pathogenesis and management of emergency care and various diseases. They were further trained by two doctors of District Hospital of Birbhum and the Coordinator of the project in 'three days' workshops held twice. In addition to training on general and reproductive ailments, effective approaches to communicate information to project beneficiaries were also taught in these workshops. Eight RHCPs (five males and three females) were divided into two groups in order to carry out outreach activities (home visits). Male members were supposed to cover the topics related to general health care and females were supposed to cover the topics related to reproductive health acknowledging its sensitivity in the local custom.

### **3.3 Provision of information**

The primary focus of the intervention was to provide women with information on signs and symptoms of various general (non-reproductive) morbidities and reproductive morbidities directly through home visits by male and female outreach workers in non-clinical settings; to make them aware about preventive aspects of these ailments, and motivate them in seeking treatment, especially from the available public facilities. Several issues on general ailments were discussed during these outreach activities such as signs and symptoms of malaria, tuberculosis, diarrhoea, pneumonia, asthma, hepatitis-A, heart disease, stroke, diabetes, nephritis, gastritis, anemia, breast cancer, gout, goitre, filaria etc. Preventive measures of these ailments such as using mosquito net, cleanliness of immediate environment, using potable water from tubewell for drinking purposes, safe sanitation, using sandals while going to toilets and latrines, especially outside home, eating adequate green vegetables and iron rich diets which can be grown within the household premises and are cost-effective, physical exercise, prevention of smoking and drinking, hand washing before eating etc. were also discussed in great detail.

Female outreach workers discussed the issues related to identification of various gynecological morbidities such as signs and symptoms of menstrual related problems, abnormal vaginal discharge and symptoms of reproductive tract infections and sexually transmitted infections (RTI/STI). Preventive aspects of these ailments such as using sanitary napkins during menstruation and changing it at least three times in a day, wash and dry pieces of cloth used as napkin during menstruation in clean environment in case the women can't afford sanitary napkins, cleanliness of personal hygiene, not to take bath in pond water,

drinking lots of fluids, using contraception, especially condom during having sex in order to prevent STIs etc. were also discussed in a detailed manner.

Male and female outreach workers also disseminated the information on danger signs of pregnancy, delivery and post-natal period. They emphasized the necessity of registration of pregnancy within 3 months of conception, periodic antenatal check-ups (at least 4 times), two tetanus toxoid injections and consumption of at least 100 iron and folic acid (IFA) tablets. Additionally, the advantage of institutional delivery and post-partum check-ups was also emphasized during disseminating information to the project beneficiaries.

### **3.4 Facilitating monthly health information and health check-up workshops**

As part of the intervention, monthly health information and check-up workshops were also facilitated in the intervention villages in order to gain acceptance for the project and the project staff among the community and also strengthen the process of confidence building among study participants and in the wider community. Two doctors from the district hospital of Birbhum went once in a month to provide health information and services among project participants and referred them to the nearest public health facility or district hospital, if found necessary. It also served to encourage the use of existing public health facility. The project facilitated five such camps during the intervention period. However, no medicine was supplied as this was not under the provision of the project.

### **3.5 Extent of exposure to intervention activities**

Drawing data from the intervention and endline survey, Table 3.1 and 3.2 describe the extent and the breadth to which women in the intervention area were exposed to the intervention activities. During the intervention period, the outreach workers visited every household in the project area 12 times. During this period, out of 666 women who were exposed to intervention, 661 women were contacted at least once by the outreach workers with information on general health care, reproductive health care and their preventive aspects. However, about 54 per cent of the women were contacted throughout the intervention period. Finally, out of 666 women 596 women were available at the endline survey.

**Table 3.1 Extent of women's exposure to the intervention activities (N=666)**

Total number of women who were exposed to intervention	666
Total number of women who were exposed to intervention and available at the endline survey	596
Total number of home visits made by the outreach workers during intervention	12
Number of women who received at least a home visit from the outreach workers	661
Number of women who received all the home visits from the outreach workers	357
Number of women who sought health check-up during health information workshop	193

It may be noted that 5 women (0.8 per cent) did not participate in the intervention programme, while 5 per cent of women received 1 to 4 visits and more than 10 per cent of women were contacted 5 to 8 times and just more than 30 per cent of women were reached 9 to 11 times. The mean number of visit per women was found to be just above 10 (with standard deviation 2.6). It is worth noting that about 29 per cent of the women in the project site sought health check-up during health information workshop organized by the doctors of district hospital and facilitated by the project coordinator.

**Table 3.2 Breadth of women's exposure to the intervention activities (N=666)**

Number of women who couldn't be contacted during entire intervention period	5
Number of women exposed to 1 to 4 home visits	33 (5.0%)
Number of women exposed to 5 to 8 home visits	68 (10.2%)
Number of women exposed to 9 to 11 home visits	203 (30.5%)
Number of women exposed to all 12 home visits	357 (53.6%)
Mean number of visits received by women	10.4

### 3.6 Challenges faced in implementing intervention activities

Although the intervention activities were accepted by the respondents and also by the wider community and encouraged by the peoples' representatives of the local body, a number of challenges had to be faced while implementing intervention activities. First, as noted earlier, the frequent movement of women to the neighbouring district in search of livelihood (temporary migration) and movement of young married women to their natal home for delivery affected efforts of the project staff to reach every women for all the scheduled visits as planned in the intervention design. For this reason, a number of women were either left out from the process of receiving all components of information or they received all the components superficially. Secondly, five women did not participate at all and a number of women did not participate after three or four visits as medicine was not available with the information (*osudh na dile sunbo kene?*). Thirdly, a few of them did not want to participate during all the visits as they thought health awareness was not necessary for them (*amader o*

*sob sonar kono darkar nai*) or food is more important for them than listening to such mundane matter (*sunbo kene tora khabar dibi?*). Few teenage participants did not want to listen about reproductive and sexual health matter as their mother perceived that their daughters are too young to listen to these ‘adult’ matters (*amar meye baccha, o a sab sunte chai na*).

These challenges are not uncommon. It is important to observe that in ‘real life’ situations intervention programmes indeed operate in less than ideal condition than it was planned while designing it.



## CHAPTER 4

# EFFECTS OF EXPOSURE TO THE INTERVENTION





## Chapter 4

# Effects of exposure to the intervention

The previous chapters concentrated on the level of awareness, on the reporting of illnesses and treatment-seeking pattern for the symptoms of general and reproductive ailments among the respondents in both the study sites. It also explored the reasons for not availing treatment, particularly from the public sector, for the above ailments by the respondents. The intervention section presents the design, objectives and facts of the intervention. It also tried to explore the extent of exposure to the intervention among respondents and the problems faced in implementing the intervention. This chapter presents the *evaluation of the exposure to the intervention* among the respondents on a number of aspects: the level of awareness about the symptoms of general, gynecological and obstetric morbidities, reporting the symptoms for the above stated ailments and the treatment-seeking pattern for the symptoms of general and reproductive morbidity.

### 4.1 Methodology

To assess the effect of exposure to the intervention on the level of awareness, reporting of illnesses and the treatment seeking pattern for the symptoms of general and reproductive illnesses among the respondents in both the study sites, endline and baseline responses are compared. This has been done to ascertain the degree of changes in indicators attributable to the exposure to the intervention.

After describing the changes in the mean level and in the percentage distribution, regression models were estimated for each of the indicators stated above to assess the net effects of the exposure to the intervention on these outcome indicators after controlling the potentially confounding factors. In view of the fact that a sizeable number of respondents in the experimental villages did not participate in every visit made by the outreach workers during the intervention period, findings related to regression estimates are presented separately for two groups: *those residing in the experimental villages were exposed to all the visits* and *those residing in the experimental village sand were not exposed to every visit*.

The model varied depending on the type of outcome variable: *linear regressions were used for all continuous variables* and *binary logistic regressions or multinomial logistic regressions were used for all dichotomous or categorical outcome variables*. In the

regression models, endline measures of the various indicators described above were used as the outcome variables.

Altogether 13 outcome indicators were considered. These are - *the index of level of awareness of signs & symptoms of general illnesses (continuous), the index of level of awareness of signs & symptoms of gynecological morbidity (continuous), the index of level of awareness of signs & symptoms of obstetric morbidity (continuous), the index of level of awareness of signs & symptoms of STIs (continuous), the index of level of awareness about the spread of STIs (continuous), reporting of any general illnesses (Yes/No), reporting of any symptoms of menstrual disorder (Yes/No), reporting of any symptoms of RTI/STI (Yes/No), reporting of any symptoms of abnormal vaginal discharge (Yes/No), reporting of any of the gynecological morbidity (Yes/No), sought treatment for any general illness (Yes/No), sought treatment for any gynecological morbidity (Yes/No), source of treatment for general and gynecological morbidity (no treatment, from public sector only, from qualified private sector & from unqualified private sector) (4 categories).*

To assess the net effect of exposure to the intervention on the outcome indicators described above, data were pooled from the two waves and analyzed by using the ***differences-in-differences (DiD)*** model. DiD model contrasts the difference in average outcome in the *intervention group before & after treatment*, with the difference in average outcome in the *control group before and after treatment*. It isolates the effects of the intervention by accounting for the effects of other factors external to the intervention that changed around the time of the intervention, and for pre-existing differences between the intervention and control groups. In DiD models, each outcome indicator, irrespective of whether it referred to the baseline or endline survey, was used as response variable.

Explanatory variables included the baseline measures of the same indicator: *a variable indicating time (coded 1 if the observation was from the endline survey and 0 from the baseline survey), a variable indicating whether the respondents were from experimental intervention group or control group (coded 1 if from the experimental intervention, and 0 if otherwise), and a variable indicating whether the observation referred to the experimental intervention group and the endline survey (coded 1 if from experimental intervention & endline survey, and 0 if otherwise), the sign of the coefficient (or odd ratio or relative risk ratio in cases of binary logistic and multinomial logistic regressions respectively) indicates the net effect of the intervention.* Since a sizeable proportion of the endline cohort was not exposed to all the visits, two separate DiD models were estimated as said earlier. In the

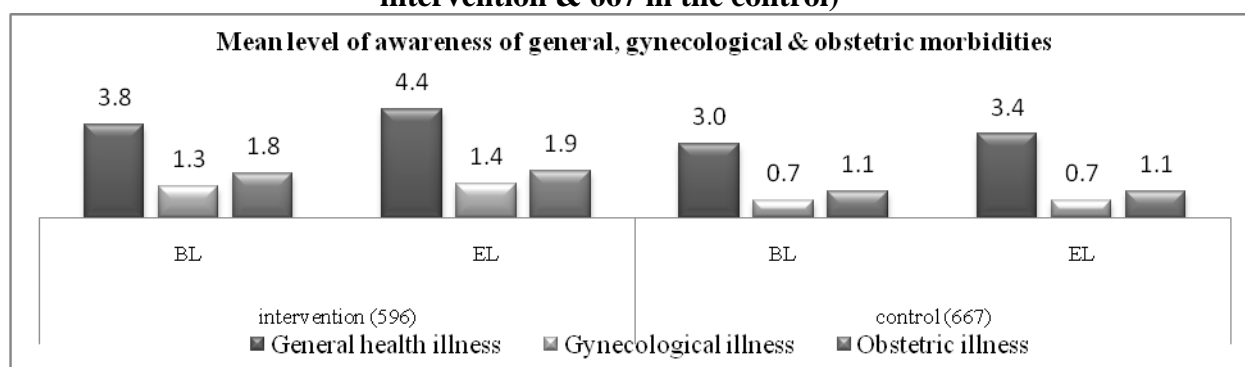
regression models, respondents from the control group were compared with those from the experimental intervention groups, after controlling for respondents' demographic and socioeconomic status such as respondent's age, marital status, socio-religious affiliation, work status, mass media exposure and standard of living. However, for the sake of convenience findings are presented that compare the situation of the respondents from the experimental intervention group and those from the control group in summary.

## 4.2 Evaluating the effect of exposure to the intervention on the level of awareness (N: 596 in intervention & 667 in control).

The findings from the univariate analysis (percentage change or percentage points change) regarding the awareness of symptoms of various general illnesses, gynecological and obstetric morbidity has been depicted in the appendix Table 1-3. The result indicates that the respondents' awareness level regarding the symptoms of general health ailments has increased from the baseline to endline survey in varying degree for all the 16 general health illnesses in both the study sites. In the intervention villages the influence of the exposure to the intervention was the highest for diabetes (42.4% points change). However, in the control villages the effect of exposure to the intervention was the largest for malaria (12% points change). The improvement in the level of awareness regarding correct symptoms of various gynecological and obstetric complications was found to be marginal except the knowledge regarding spread of STI.

Fig 4.1 presents the mean comparison between the endline and baseline responses of the respondents from the intervention and the control villages with respect to the level of awareness about the symptoms of general, gynecological and obstetric ailments.

**Fig 4.1: Mean level of awareness about the symptoms of general illnesses, gynecological and obstetric morbidity across the GPs using baseline and endline data (N: 596 in the intervention & 667 in the control)**



As discussed earlier, although the level of awareness regarding symptoms of general health problems improved in both the sites, the analysis indicates that the improvement in the level of awareness was unimpressive regarding the symptoms of reproductive ailments among the respondents in both the study population.

Results of regression analysis of the exposure to the intervention on the level of awareness about the symptoms of general, gynecological and obstetric morbidity, STI and spread of STI after controlling for potential confounding factors, are presented in Table 4.1. Contrary to the results of univariate analysis, the influence of the exposure to the intervention in increasing the level of awareness for the symptoms of general health illness, gynecological and obstetric morbidity was positive and significant irrespective of number of visits.

**Table 4.1: Effect of exposure to intervention about the level of awareness of general and reproductive morbidities: summary results of multiple linear regressions using baseline and endline data (N: 596 in the intervention & 667 in the control).**

Dependent variable	Coefficient	
	Exposure to any one visit	Exposure to all the visits
Index of awareness of symptoms of general health morbidity	0.47 (0.16,0.79)***	0.95 (0.59,1.32)***
Index of awareness of symptoms of gynecological morbidity	0.32 (0.12,0.53)***	0.62 (0.39,0.85)***
Index of awareness of symptoms of obstetric morbidity	0.41 (0.21,0.61)***	0.68 (0.44,0.92)***
Index of awareness of symptoms of STI	-0.01 (-0.05,0.04)	0.04 (-0.02,0.09)
Index of awareness of spread of STI	-0.07 (-0.13,-0.01)	-0.11 (-0.18,-0.03)

(Note: \*p<0.01, \*\*P<0.05, \*\*\*P<0.001 & Parenthesis denote 95 % confidence limit)

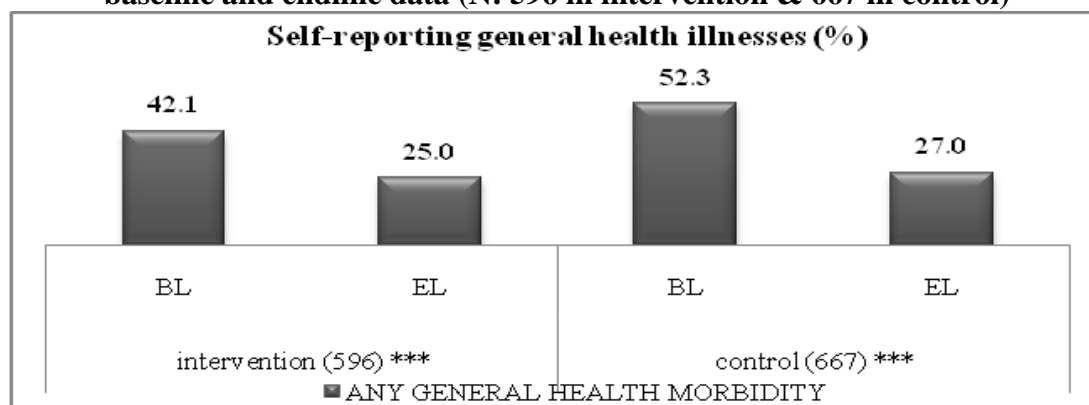
NOTE: Control Variable includes age, marital status, status of living index, socio-religious category, educational attainment, exposure to mass media (such as television, radio and newspaper), work status, baseline knowledge index of each dependent variable.

However, values of the coefficients were found to be higher for those who were exposed to all the visits made by the outreach workers. It may be noticed that the exposure to the intervention did not have any significant positive influence among the respondents in increasing the level of awareness regarding the symptoms of STI and the spread of STI even after controlling other potential confounders. In other words, while exposure to the intervention in increasing the level of awareness about the symptoms of general, gynecological and obstetric morbidity had positive and statistically significant effect among the respondents, no such significant impact has been observed regarding increase in the awareness level about the symptoms and spread of STI.

### 4.3 Evaluating the effect of exposure to the intervention on reporting of the symptoms of illnesses (N: 596 in the intervention & 667 in the control).

Appendix Table 4 and Fig. 4.2 present comparison between the endline and baseline responses of the respondents from the intervention and control villages about reporting of the signs and symptoms of general health illnesses. Although results show a decline in the

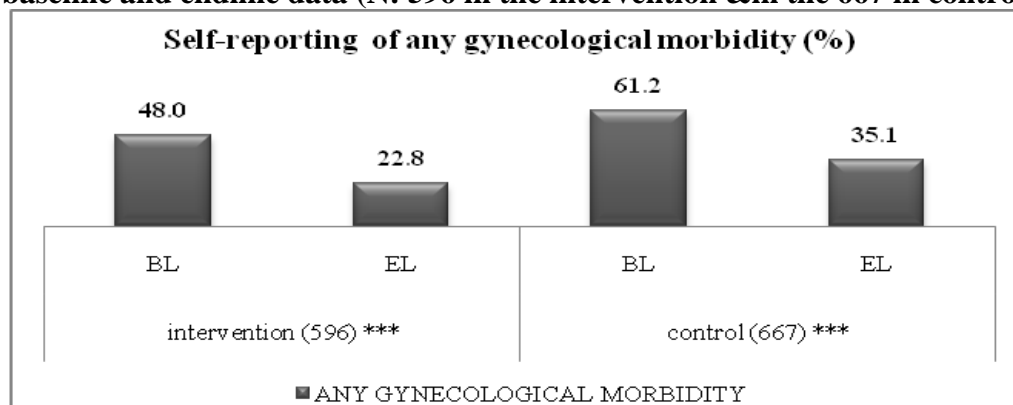
**Fig 4.2: Self-reported symptoms of any general health ailments across the GPs using baseline and endline data (N: 596 in intervention & 667 in control)**



reporting of general illnesses in both the study sites, the extent of decline in terms of percentage points was higher in the control villages compared to the intervention villages. The reduction in reporting was the highest for gas/acidity in case of the intervention site, while it was the highest for 'other' illnesses (not listed in the questionnaire) in the control site.

Appendix Table 5 and Fig 4.3 present results comparing the proportion of respondents at the baseline and endline who reported the symptoms of gynecological morbidity in the intervention and control villages. The outcome indicators considered here are the endline

**Fig 4.3: Self-reported symptoms of any gynecological morbidity across the GPs using baseline and endline data (N: 596 in the intervention & in the 667 in control)**



indices about the self-reported symptoms of gynecological morbidity. Information was collected from the respondents about the reporting of self-reported symptoms of gynecological morbidity. Univariate analysis indicates that the self-reporting symptoms of gynecological ailments among the respondents have declined at the endline compared to the baseline in both the study villages to almost a similar extent (25.2 percentage points in the intervention site and 26.1 percentage points in the control site).

To explore the effect of the exposure to the intervention regarding the self-reported symptoms of general and gynecological morbidity among the respondents in both the sites after controlling potential confounders, five outcome indicators were considered. These are: *reporting of any general illnesses (Yes/No)*, *reporting of any symptoms of menstrual disorder (Yes/No)*, *reporting of any symptoms of RTI/STI (Yes/No)*, *reporting of any symptoms of abnormal vaginal disorder (Yes/No)* and *reporting of any of the above gynecological morbidity (Yes/No)*. As mentioned earlier, 2 separate DiD models using logistic regressions (since the outcome variables were dichotomous) were estimated separately for those who were exposed to any visit and for those who were exposed to all visits and the summary results are given in the Table 4.2. Findings show that the net effect of the exposure to the intervention in reporting the symptoms of general and menstrual problems were significant among the respondents who were exposed to all the visits, however, in a different direction.

**Table 4.2: Effect of exposure to intervention in the reporting of symptoms of general and gynecological morbidities: summary result of logistic regression using DiD model using baseline and endline data (N: 2525)**

Response variable	Odds Ratios	
	Exposure to any one visit	Exposure to all the visits
Prevalence of any ailments among respondents		
Respondents reported any general health illness	1.12(0.79,1.60)	1.44(1.03,2.02)*
Respondents reported any menstrual morbidity	0.64(0.96,1.06)*	0.54(0.30,0.97)**
Respondents reported any RTI/STI	1.12(0.78,1.61)	1.15(0.80,1.64)
Respondents reported any abnormal vaginal discharge	0.86(0.45,1.67)	1.12(0.60,2.10)
Respondents reported any gynecological illness	0.97(0.69,1.37)	1.02(0.73,1.43)

(Note: \*p<0.01, \*\*P<0.05, \*\*\*P<0.001 & Parenthesis denote 95 % confidence limit)

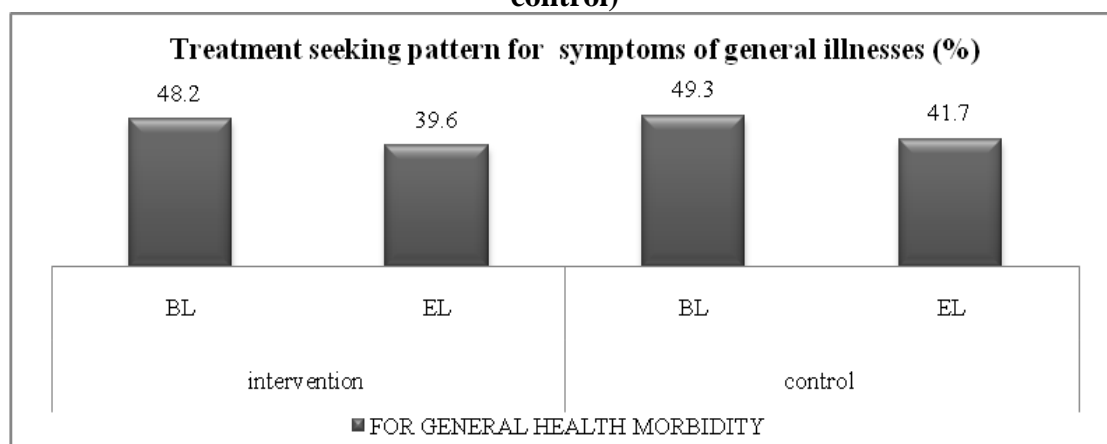
NOTE: Control Variable includes age, marital status, status of living index, socio-religious category, educational attainment, exposure to mass media (such as television, radio and newspaper), work status, baseline knowledge index of each dependent variable.

It may be observed from the same Table that reporting of general illnesses has increased significantly for those who were exposed to all visits, while it declined significantly in case of menstrual related problem among the same set of respondents. However, for the reporting of the symptoms of RTI/STI, abnormal vaginal discharge and also for any gynecological morbidity, the effect of the exposure to the intervention was found to be insignificant irrespective of the study site. In other words, in both the settings once confounding socio-demographic factors were controlled, it was evident that although the exposure to the intervention indeed had a significant effect in the reporting of the symptoms of general and menstrual problems (in different direction), it was not statistically significant for other gynecological symptoms. Thus, the effect of the exposure to the intervention in reporting illness was not clear, rather it was varied across diseases.

#### 4.4 Evaluating the effect of exposure to the intervention in seeking treatment for the symptoms of illnesses (N: 596 in the intervention & 667 in the control).

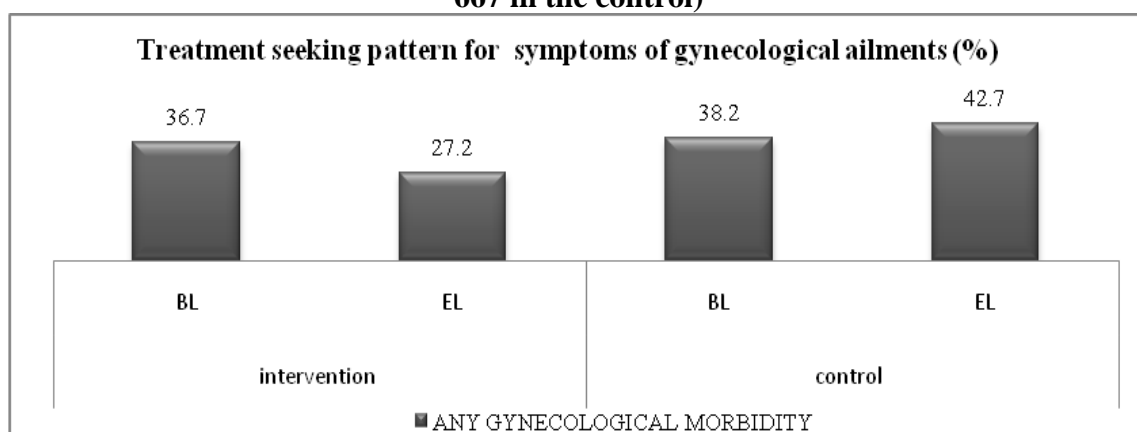
Baseline and endline treatment-seeking for the general illnesses and gynecological problems have been depicted in Fig. 4.4 and 4.5. It apparently shows that proportion of women seeking treatment at the endline has declined compared to the baseline in both the study sites in case of general illnesses. It was also observed that the decline is more for the respondents belong to the intervention villages (8.6 percentage points) compared to the control villages (7.6 percentage points).

**Fig 4.4: Proportion of women seeking treatment for the symptoms of general illnesses across the GPs using baseline and endline data (N: 596 in the intervention & 667 in the control)**



It is interesting to note that without controlling socio-demographic factors, the treatment-seeking has increased for the symptoms of gynecological problems in the control site (4.5 percentage points), while it has reduced in the intervention site by 9.5 percentage points.

**Fig 4.5: Proportion of respondents seeking treatment for the symptoms of gynecological morbidity across the GPs using baseline and endline data (N: 596 in the intervention & 667 in the control)**



To explore the effect of the exposure to the intervention in seeking treatment for the symptoms of general illnesses and gynecological morbidity between the baseline and endline cohorts in the intervention and control villages, four outcome indicators were considered. These are: *sought treatment for any general illness (Yes/No)*, *sought treatment for any menstrual problem (Yes/No)*, *sought treatment for any RTI/STI (Yes/No)* & *sought treatment for any gynecological morbidity (Yes/No)*. In case of treatment-seeking for *abnormal vaginal discharge* the effect of the exposure to the intervention could not be obtained because of inadequate sample size with zero cell-counts (N: 169). Since all the outcome variables are dichotomous, binary logit regression models were employed to obtain odd ratios of DiD models after controlling socio-demographic characteristics of the respondents.

The summary results of the binary logit regression analyses using DiD model indicating the effect of exposure to the intervention in seeking treatment for the symptoms of general, menstrual, RTI/STI and any gynecological problems have been presented in the Table 4.3. Findings suggest that even after controlling a range of socio-demographic variables, the odds of seeking treatment for the symptoms of general and menstrual problems was positive and significant among respondents who were exposed to all visits. However,



**Table 4.3: Effect of exposure to intervention in seeking treatment for the symptoms of general and gynecological problems: summary result of binary logit model using DiD model using baseline and endline data (N: 2525)**

Response variable	Odds Ratios	
	Exposure to any one visit	Exposure to all the visits
<b>Treatment seeking for any ailments among respondents</b>		
Respondents seek treatment for any general health illness (n:929)	0.84(0.47,1.55)	1.51(0.85,2.68)*
Respondents seek treatment for any menstrual morbidity (N:394)	0.56(0.19,1.63)	1.18(0.34,4.08)*
Respondents seek treatment for any RTI/STI (N:869)	0.47(0.24,0.95)*	1.02(0.49,2.11)
Respondents seek treatment for any gynecological morbidity (N:1064)	0.50(0.27,0.90)*	1.02(0.47,1.69)

(Note: \*p<0.01, \*\*P<0.05, \*\*\*P<0.001 & Parenthesis denote 95 % confidence limit)

NOTE: Control Variable includes age, marital status, status of living index, socio-religious category, educational attainment, exposure to mass media (such as television, radio and newspaper), work status, baseline knowledge index of each dependent variable.

the respondents who were not exposed to every visit are significantly less likely to seek treatment for the symptoms of RTI/STI and any gynecological problems. In other words, respondents who were exposed to all visits are more likely to seek treatment in case of general and menstrual problems, while the effect of any visit was negative and significant in seeking treatment for RTI/STI and any gynecological problem. Thus, like reporting of diseases, the net effect of the intervention in seeking treatment was not uniform, rather it varied according to the nature of illnesses.

It may be noted in this context that it was not possible to explore the effect of the exposure to the intervention in case of antenatal care seeking, obstetric complications and change in the level of institutional delivery among the respondents due to varying reference periods. In the baseline, data on pregnancy and live-birth were collected for the period July 2009-June 2010, while the reference period for the endline was November 2010 to May 2011. We were compelled to adopt this frame of reference since our intervention begun in November 2010 and the endline data collection was over by May 2011. Moreover, regression analysis was not possible in this case due to inadequate sample size with zero cell-counts resulting in high standard errors of the explanatory variables. Nonetheless, we have tried to make a comparison between baseline and endline data.

Table 4.4 presents findings comparing the endline and baseline responses of the women from the intervention and the control villages to the questions related to uptake of ANC, reporting signs and symptoms of antenatal, delivery and post-partum complications and associated treatment seeking pattern in the given reference period. It has been observed that 3 or more

**Table 4.4: Utilization of antenatal care services, self-reported obstetric illnesses and treatment seeking pattern for the symptoms of obstetric problems across the GPs using baseline and endline data(N: 47 in the intervention & 49 in the control)**

Details of pregnancy, ANC, delivery and post-partum care and morbidity	Intervention		Control	
	Baseline	Endline	Baseline	Endline
	Total number of pregnancies between July,2009 – June,2010	Total number of pregnancies between Nov, 2010 – May, 2011	Total number of pregnancies between July,2009 – June,2010	Total number of pregnancies between Nov, 2010 – May, 2011
	55	57	54	43
Pregnancy registration at the first trimester	55	57	54	43
Abortion (spontaneous)	1	3	1	---
Abortion ( induced)	2	1*	---	---
Currently pregnant	3	7	1	8
Total number of deliveries took place between the said period	<b>52</b>	<b>46</b>	<b>53</b>	<b>35</b>
3 or more ANC visits	7(14%)	33 (71.7 %)	20(38%)	26 (74.3%)
2 TT injection	49(89.1%)	44 (95.7 %)	48(88.9%)	35 (100%)
Consumed all IFA given to them	34(61.8%)	32 (69.6 %)	21(38.9%)	26 (74.3%)
Any problem during antenatal period	27(49.1%)	17 (37.0 %)	33(61.1%)	8 (22.9)
Treatment seeking for ANC problem	15(55.6%)	10(58.8%)	16(48.5%)	4(50%)
Delivery took place in institution	29(55.8%)	34 (73.9 %)	35(66%)	27 (77.1%)
Any complication during delivery	33(60%)	8 (17.4 %)	39(72.2%)	4 (11.4%)
Any complication during post-partum period	11(20%)	14 (30.4 %)	23(42.6%)	11 (31.4%)
Treatment seeking for post-partum	6(54.6%)	9(64.3%)	8(34.8%)	4(36.4%)

\*(induced due to contraceptive failure (tubectomy))

antenatal care (ANC) visits have increased from 14% to nearly 72% in the intervention site, while it increased to 74.3% from 38% at the baseline in the control areas. Receipt of 2 tetanus injections has increased from 89% to 96% in the intervention area after exposure to intervention, while it increased to 100% from 89% in the control area. Consumption of iron and folic acid (IFA) tablets/syrup has also increased from 62% to about 70% in the

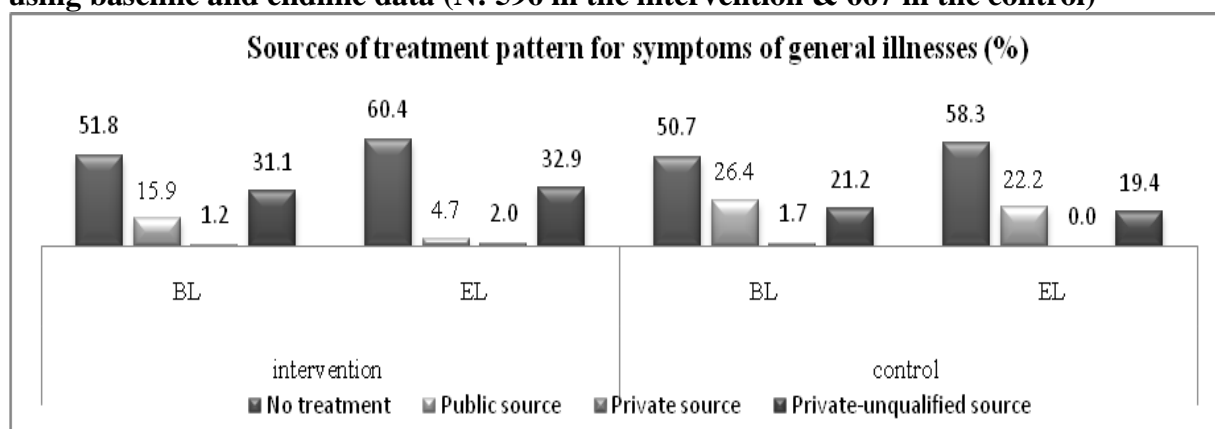
intervention area, while it increased to 74% from 39% at the baseline in the control area. Reporting of pregnancy related complication has been reduced in both the sites; from 49% at the baseline to 37% at the endline at the intervention area and from 61% to 23% in the control area. Seeking treatment for pregnancy complication has increased marginally at both the sites. Deliveries conducted in the institution have increased substantially in both the sites, comparatively high in the intervention area (56% to 74% at the endline in the intervention area and 66% to 77 percent in the control area). With the increase in institutional delivery, delivery complications have been reduced considerably (from 60% to 17% in the intervention area and from 72% to 11% in the control areas). However, reporting post-partum problems has increased at intervention site; from 20% to 30% at the intervention, while it declined from 43% to 31% in the control area. It was also observed that treatment-seeking for post-partum problems has increased in both the sites, especially in the intervention site (from 55% to 64% at the intervention site and from 35% to 36% at the control site).

#### **4.5 Evaluating the effect of exposure to the intervention on the source of treatment seeking for the symptoms of illnesses (N: 596 in the intervention & 667 in the control).**

To assess the effect of the exposure to intervention on the different sources of treatment seeking for symptoms of general, menstrual, RTI/STI, and any gynecological morbidity, respondents' endline and baseline responses are compared. The outcome indicators considered here are the endline indices of seeking treatment for the symptoms of general illness, menstrual, RTI/STI and any gynecological problems from public, private and unqualified-private providers.

Fig 4.6 presents comparisons of the endline and baseline responses regarding seeking treatment for the symptoms of general illnesses from different sources such as from public, private-qualified and private-unqualified providers. Univariate analysis suggests that greater proportion of women consulted private-qualified as well as private-unqualified providers for the treatment of symptoms of general ailments at the endline compared to the baseline in the intervention village. It may also be noted that utilization of public facilities has reduced by 11 percentage points at the endline from the baseline for such ailments at the intervention

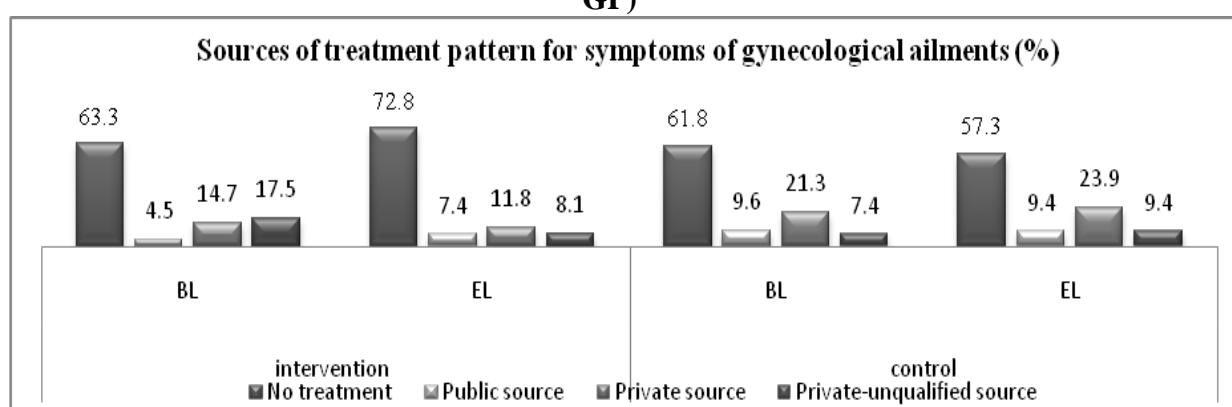
**Fig 4.6: Source of treatment for the symptoms of any general illness across the GPs using baseline and endline data (N: 596 in the intervention & 667 in the control)**



villages. At the control site, although treatment-seeking from the public facilities has also declined at the endline compared to the baseline, the degree was much less compared to the intervention site (by 4 percentage points).

Fig.4.7 presents the comparison of baseline and endline responses of the respondents regarding different sources of seeking treatment for the symptoms of gynecological problems in the intervention and control villages. Findings suggest that although the proportion of women who sought treatment for these problems declined from the baseline to the endline survey, utilization of public facilities increased by 3 percentage points in the intervention site.

**Fig 4.7: Source of treatment for the symptoms of any gynecological morbidity across the GPs using baseline and endline data (N: 596 in the intervention GP & 667 in the control GP)**



It is worth noting that seeking treatment from unqualified providers declined substantially between the surveys (by 9.4 percentage points) in the intervention villages. On the contrary, although proportion of women who sought treatment has increased between the baseline and

the endline survey, the utilization of qualified and unqualified private sources has increased marginally in the control site.

To explore the effect of the exposure to the intervention in determining the source of treatment, the variable, namely, source of treatment (no treatment, from public sector only, from qualified private sector & from unqualified private sector) with 4 categories was considered. Since the outcome variable has more than two categories, multinomial logit regressions using DiD model have been used to understand the net effect of the exposure to the intervention in seeking treatment from different sources. The relative risk ratios were in the Table 4.5. The findings from the regression estimates suggest that there is no uniform

**Table 4.5: Effect of exposure to the intervention in seeking treatment from different sources for the symptoms of gynecological illnesses: summary result of multinomial logit regressions using DiD model pooling baseline and endline data (N:2525)**

Response variable		Relative Risk Ratios						
	General (N:929)		Menstrual (N:394)		RTI/STI (N:860)		Gynecological (N:1064)	
Treatment seeking	Exposure to any one visit	Exposure to all visits	Exposure to any one visit	Exposure to all visits	Exposure to any one visit	Exposure to all visits	Exposure to any one visit	Exposure to all visits
Public sector	0.41 (0.14,1.22)	0.71 (0.22,2.21)	0.46 (0.04,5.25)	2.18* (0.18,4.91)	0.73 (0.18,2.93)	0.70 (0.13,3.70)	0.71 (0.21,2.45)	0.90 (0.22,3.66)
Private sector	0.92 (0.43,1.96)	1.64* (0.78,3.47)	0.61 (0.18,2.11)	0.92 (0.22,4.00)	0.55 (0.20,1.48)	1.14* (0.41,3.15)	0.64 (0.29,1.40)	0.88 (0.38,2.04)
Unqualified private sector	0.90 (0.43,1.88)	1.70 (0.87,3.34)	0.43 (0.03,6.67)	2.60 (0.16,5.31)	0.37* (0.13,1.08)	1.55 (0.53,4.56)	0.30* (0.12,0.78)	1.13 (0.43,2.95)

(Note: \*p<0.01, \*\*p<0.05, \*\*\*p<0.001 & Parenthesis denote 95 % confidence limit)

NOTE: Control Variable includes age, marital status, status of living index, socio-religious category, educational attainment, exposure to mass media (such as television, radio and newspaper), work status, baseline knowledge index of each dependent variable.

pattern regarding choice of sources, rather it varies according to nature of illness. It may be noted that the respondents who were exposed to all visits are more likely to consult private qualified providers for the treatment of general illnesses, while they are more likely to utilize available public facilities for the treatment of menstrual problems. It may be noted that the respondents who were exposed to all visits are notably less eager to use the services of unqualified private practitioners.

In brief, although the level of health awareness has significantly increased among the respondents between pre- and post-intervention period, the effect of intervention in reporting diseases and seeking treatment was mixed.

We offer here some of the case studies which underline the fact that the intervention did have some positive impact on the respondents' well-being and their families. For example, Geeta Mondal of Chamubera village said, on being instructed she used mosquito net while sleeping and could thus prevent attack of malaria, which in the past had attacked her twice. Again, Rahima Khatun of Kapistha village said that by giving her child saline water (mixture of salt, sugar and water) when the latter was victim of diarrhoea, she could control the illness. She further said that the health providers advised her saline water, an advice which she followed. The advice was particularly helpful because her child fell ill during the weekend when all dispensaries and health centres were closed.

Another participant named Munni Bai of Kendsarail village admitted that in the past she had objected to the pulse-polio programme with other women. In fact, the women did not cooperate with the volunteers of pulse-polio programme. Now their attitude has changed because of the comprehensive intervention carried out by the health workers trained by the project consultants. The present project, especially the intervention activities, has increased the quantum and quality of their health awareness and knowledge. Munni Bai said "We have come to know a lot about women's health and we are taking steps to prevent illnesses of women and children. That is, we ourselves have been greatly benefitted and have got rid of preconceived notions as well as prejudices. Moreover, we are taking our children to public health centres for immunization."

"Let me emphasise one great difference this project has made" said Haridasi Bagdi of Kapistha village. "Previously, like our mothers and grand-mothers we used to take bath in the local ponds. This unhealthy practice led to infections affecting our vaginal tract. The extent of this infection has got remarkably reduced following our interactions with the health workers. They pointed out that we are indulging in unhealthy practice and that we should bathe in tubewell water. We listened to their advice and have begun to use tubewell water. Similarly, whenever we feel that we are ill, we go to the sub-centre for treatment. This was also advised by the health workers engaged in this project".

"There is a remarkable difference in the situations before and after the project" said Monosa Hansda, a tribal women living in the study village Chamubera. Pointing out the difference she said, "After my child birth one and half year ago I felt weak and ill for a considerable length of time. I was a victim of anemia and my health deteriorated. I could not even take the iron tablets recommended by the physician because this tasted severely bitter. The health workers involved in the project examined me and suggested that I should take green-leafy vegetables rich in iron content. They stressed that I should eat fig, *kulekhera*

leaves and green bananas regularly which are available in the village environment and are cheap. I followed their advice and now I feel much stronger and better”.

Finally, we come to Chabi Bauri of Kendsarail village, who prevailed upon her husband to use condom while having sex. In her words, “I had a feeling that because I have undergone tubectomy, I could not be infected from my husband. But I was told by the health workers that tubectomy was not enough. I listened to what they said and requested my husband to use condom which he did. Now I feel safe and secure”.

## CHAPTER 5

# MEETINGS AND DISSEMINATION WITH STAKEHOLDERS





## Chapter 5

### Meetings and dissemination with stakeholders

Conducting meetings and dissemination workshops with the stakeholders of the project has been an important component throughout the project period. During the preparatory phase, a series of meetings were held with the district administration, particularly with the district magistrate of the Birbhum district, sub-divisional officer of Suri *Sadar*, block development officer of the concerned block to convey the idea of the project, design of the intervention and expected output from the project. Additionally, meetings were conducted with the local level elected political representatives and local community level health workers about the project plan; as to how it could improve the health status of women in the study area was also discussed and a full support was asked for. Again, before conducting the baseline survey, another round of such meetings with the aforesaid stakeholders was held informally.

The dissemination workshops of the baseline survey were conducted in both the study GPs. More than one-third of the elected political representatives of the local body (including *panchayet prodhans*) were present in the baseline dissemination workshop. Besides, local level community health workers, members of self-help groups etc. were also present in this workshop. The workshops were interactive in nature. They were informed about the prevailing level of health communications as practiced by the community health workers and level of knowledge regarding general and reproductive health among the women of reproductive ages in the concerned area. The baseline findings regarding reporting of symptoms of general and reproductive illnesses and associated treatment-seeking behaviour were also discussed. Acknowledging the low level of communication with the women regarding health issues and low level of treatment-seeking from public facilities, the community level health workers drew attention of the *panchayet* members to the lack of staff, inadequate physical infrastructure and lack of inter-sectoral coordination amongst them. Besides, they also agreed on the issue that it is really very hard to bring patients to public facilities, especially the tribal, as they have faith in traditional system of medicine which is deeply rooted in their cultural custom. *Panchayet* members and the members of village-health committee (VHC) informed that they will try their level best to act on these issues and take these to the higher level.

The design of the intervention programme was discussed with the *panchayet* members of both the GPs and then implemented in the study villages of that *panchayet* where members of the *panchayet* were very passionate about the idea of the intervention and assured all sorts of help. They made the community aware about the intervention programme and in due course the programme was implemented.

During the intervention phase, monthly health information and check-up camps were facilitated where two doctors from the District Hospital were involved. These information and check-up camps were interactive and participants asked many questions on the issues related to preventive aspects of healthcare.

After the implementation of the intervention programme, endline survey was conducted and subsequently the final dissemination workshop, which aims to evaluate the intervention programme, was conducted in both the GPs. Nearly half of the members of the GP, including *panchayet prodhans* of both the GPs, and community level health and social workers, members of the self-help group were present in the final dissemination workshop. The endline results were discussed in detail in the workshop. During dissemination, it was pointed out that although there is a substantial increase in the level of health knowledge and communications with the community level health workers, considerable reduction of prevalence of diseases etc., the utilization of public facilities in seeking treatment for various ailments remained at the low level. The community level workers as well as members of the VHC of the *panchayet* were of the view that changing pattern of treatment-seeking would likely need some time in 'taking off' and thus could not be evaluated or achieved in such short period of time. However, they highlighted that there are immediate indirect effects in increasing utilization of child immunization services and recent success of state sponsored pulse polio programme etc. They also emphasized supply-side constraints such as timely supply of drug, paucity of funds in setting up adequate number of tubewells and immediate filling up posts which were lying vacant due to transfer or retirement of staff.

The state-level dissemination workshop including a 2-day South-Asian Conference was organized on 15-16 December, 2011 to take the issue to the wider community involving academia, health administration, NGOs etc. Academicians from different fields of reproductive health research across various parts of the country and persons working in various national level NGOs took part and presented their research findings. Two paper presenters from Bangladesh could not come due to visa problem. Opening remarks of the conference were delivered by the current Secretary, Department of Health & Family Welfare, Government of West Bengal. In the opening remarks, the Secretary discussed the current

maternal health situation and drew attention to various supply-side constraints. He also emphasized the importance of small scale research/intervention studies and their further scaling up in appropriate direction. The Coordinator of the project disseminated the findings of the project to the conference participants. The conference participants appreciated the project design and enormous efforts put in the project. However, the report was critically commented on the grounds of limited time frame of the intervention, and the appropriateness in disseminating baseline results in the study GPs which is generally not permitted in quasi-experimental design framework, endline data collection immediately after the intervention etc. On the concluding day, Minister in Charge of the Department of Environment, Government of West Bengal, who is one of the finest gynecologists & infertility specialists in the country, chaired the last session and also delivered valedictory address. In the valedictory address, he emphasized the need of such kind of research/intervention studies and also organizing such kind of conference. Additionally, the baseline findings were presented in a form of research paper titled "*Inequality in provider choice in treatment seeking for sexual and reproductive morbidity in the context of underdevelopment: An exploratory analysis of rural West Bengal, India*" in the 6<sup>th</sup> International Conference on *Making Policy a Health Equity Building Process* held in Cartagena, Colombia between September 26 and September 28, 2011 and raised the issue amongst international community.

### Indicators of success

It is true that we have attained success in several areas of indicators. Only in a few the desired aims could not be achieved possibly due to time constraint. The indicators of success have been summarized in the following Table:

Indicators	Fully succeeded	Partially succeeded	Not succeeded
Awareness about non-reproductive healthcare in 2011 has increased by 20% from the level of baseline	Yes		
Awareness about reproductive healthcare in 2011 has increased by 20% from the level of baseline	Yes		
Proportion of marginalized sections seeking public reproductive health care in 2011 has increased by 10% from the level of baseline			Yes
The maternal morbidity of the	Yes		

marginalized sections has decreased in 2011 by 10% from the level of baseline			
One-third of local rural health care providers and <i>Panchyeti Raj</i> members of the <i>panchayet</i> and public health workers attended meetings/workshops/seminars	Yes		

## CHAPTER 6

# CONCLUSIONS AND RECOMMENDATIONS



## Chapter 5

### Conclusions and recommendations

This chapter summarizes the major findings of the study and highlights key lessons learned for programmatic implications in order to improve health status of marginalized rural women live in underdeveloped region of West Bengal.

With limited timeframe and resources, the women's health project was designed to improve knowledge of general and reproductive related health and practices, increase their ability to detect illnesses by identifying signs and symptoms correctly and seek treatment from qualified sources, especially from the available public source through outreach activities. At the same time, the intervention project was also focused on the preventive aspects of health care which is generally absent in successive health policies in India. In absence of any previous diagnostic study in the study sites, the project was purely 'exploratory' in nature. Implemented in rural sites of Md. Bazar block, which is one of the underdeveloped blocks of rural Birbhum - the project adopted a multi-pronged approach to directly reach women of reproductive age group, with information on the signs and symptoms of general (common) illnesses, gynecological (menstrual, RTI/STI, abnormal vaginal discharge) and obstetric (antenatal, delivery and post-partum) complications, the means to prevent these ailments, take immediate action if they perceive that they have such illnesses. It was hypothesized that the demand for health care in the community might be generated in this way and could also contribute in making health services, especially from public sources, more accessible.

A quasi-experimental research design, with baseline and endline surveys conducted in the intervention and control villages prior to the implementation of intervention activities and at its conclusion, was used to evaluate the effect of exposure to intervention activities. Findings indicate that effect of exposure to the intervention had a positive and significant net effect on most of the indicators reflecting the level of awareness about the signs and symptoms of general illnesses, gynecological and obstetric complications.

However, the net effect of exposure to the intervention was mixed with regard to indicators related to reporting of illnesses. For example, the possibility of reporting of general

illnesses was increased among respondents who were fully exposed to the intervention, while it was declined significantly among them for the menstrual problems.

Likewise, the net effect of exposure to the intervention was mixed with regard to treatment seeking practices. It was found that the likelihood of seeking treatment was increased significantly in cases of general and menstrual problems among respondents who were fully exposed to intervention, while it was reduced for the treatment of the symptoms of RTI/STI and any gynecological problem among respondents who were partially exposed to intervention.

Similarly, the net effect of exposure to the intervention in determining the sources of treatment was mixed and varies according to nature of illness. It may be noted that respondents, who were exposed to all visits, were more likely to seek treatment from private qualified sources in case general illnesses. The likelihood of seeking treatment from public sources was found to be higher for the menstrual problems. It is worth noting that probability of seeking treatment from unqualified private practitioners for RTI/STI and any gynecological problem reduced significantly.

Thus, in a nutshell, although exposure to the intervention has positive, significant effect in increasing the level of awareness in identifying the signs and symptoms correctly for the general illnesses and reproductive ailments, the net effect of exposure to the intervention in reporting illnesses and pattern of seeking treatment for the symptoms of such illnesses was mixed and varies according to nature of illness. Moreover, due to inadequate sample size and varying reference period, the effect of exposure to intervention in reporting obstetric complications and changes in pattern of seeking-treatment before and after intervention could not be measured.

We believe that this may be because of two primary reasons. First, the intervention period of the project was very limited and possibly not sufficient enough to contribute rapid behavioural changes in every aspect of health care. Secondly, the time gap between accumulating 'knowledge', its 'internalization' and implementing it in 'practice' might also have contributed in such mixed outcomes. Better results, perhaps, could have been obtained if the duration of intervention activity was long as well as there is some time gap between end of intervention and endline data collection.

Additionally, other limitations of the study, which might have exaggerated the evaluation of intervention, required to be highlighted. These are as follows. First, the pre-existing differences between the intervention and the control villages regarding the background characteristics of the respondents. Finding out exact 'control' group was very



hard as many such studies have pointed out. Second, given that some of the components of health practices that intervention sought to address, such as antenatal care, institutional delivery, post-partum care, are typically focus of government's programmes at both the study sites, especially that of National Rural Health Mission (NRHM), it was difficult to isolate the changes entirely attributable to exposure to the intervention. Third, frequent movements of women during harvesting and sowing seasons to the neighbouring districts in search of livelihood or otherwise diminished their exposure to different components of the intervention. We also note the possibility of this weakening the effects of the intervention on some of the expected outcomes, including women's health practices, since the intervention could not influence the family or health services outside the project sites. Fourth, there was no scope of intervention on the supply-side factors such as providing ambulatory care services to the respondents, supply of medicine, setting up tubewells and so on as these were not part of our project. Fifth, dissemination of baseline results in both the study sites might have affected the evaluation of the intervention as the *panchayet* members and grassroot level public health care providers became conscious about their activity and amend themselves in providing services to the women. Furthermore, since the intervention package include both the aspects of health care – preventive as well as curative – it was difficult to estimate changes attributable to each of these components in the reduction of reporting diseases and changes in treatment-seeking practices.

Our understanding suggests that addressing diversity of the target population is very important for the future studies. Within women of reproductive age group, there is substantial diversity, including adolescent girls, unmarried women, currently married, newly married and recent mothers. Hence there is a critical need to tailor information and provision of services to the distinct life stages and needs of each subset of women.

Our experience also suggests that grassroot level public health care providers needs to be sensitized to the special needs of women from disadvantageous community in understanding health issues; and special efforts are needed to provide preventive and curative aspects of health information and services directly to the women through outreach workers in the form of information, education and counseling (IEC) activities. While there was hardly any resistance in tailoring health information to the respondents, in some cases mothers did not approve of their adolescent daughters to listen reproductive health information as they perceived their daughters are not 'adult' enough. In this scenario, it is important to train staff to build sufficient rapport with the mothers and other adult family members when working with young adult women.



In brief, the findings from this study are indeed encouraging. The experience of implementing this project demonstrates that it is possible to improve women's general and reproductive health awareness and health practices. Improvement in health knowledge could have resulted in positive health outcomes in the long run. Equally important is the finding that the intervention was viable to implement and acceptable to the community. Rectifying above shortcomings, similar intervention programme may be tested on a large scale with longer timeframe in other underdeveloped settings. Further, the model may be integrated into existing NGO or government services just orienting grassroot level health workers, without investing much additional resources.

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## Appendix A

### Tables

**Table 1: Level of awareness of at least two correct symptoms of general illnesses in the study GPs using baseline and endline data (N: 596 in the intervention & 667 in the control)**

Illnesses	Intervention (%)			Control (%)		
	Baseline	Endline	%pt change	Baseline	Endline	%pt change
Malaria	74.0	98.8	24.8	76.1	88.1	12.0
Tuberculosis	71.8	96.1	24.3	80.7	87.1	6.4
Diarrhoea	96.5	99.2	2.7	94.3	96.3	2.0
Pneumonia	41.9	57.7	15.8	49.9	50.5	0.6
Asthma	53.5	84.1	30.6	75.3	84.1	8.8
Jaundice	98.2	99.3	1.1	96.4	97.2	0.8
Heart disease	45.1	68.0	22.9	69.9	78.0	8.1
Stroke	66.8	71.0	4.2	75.6	75.8	0.2
Diabetes	18.3	60.7	42.4	47.1	51.6	4.5
Kidney problem	50.7	62.2	11.5	53.7	61.2	7.5
Gastritis	87.2	91.1	3.9	92.5	92.9	0.4
Anemia	14.4	52.3	37.9	23.1	28.0	4.9
Breast cancer	56.0	70.5	14.5	54.1	58.2	4.1
Gout	86.6	92.3	5.7	82.8	83.0	0.2
Goitre	20.5	56.2	35.7	60.4	72.0	11.6
Filaria	62.8	86.4	23.6	64.6	72.0	7.4
<b>Total cases</b>	<b>596</b>	<b>596</b>	<b>596</b>	<b>667</b>	<b>667</b>	<b>667</b>

**Table 2: Level of awareness about different gynecological problems, STI and their spread among respondents in the study GPs using baseline and endline data (N: 596 in the intervention & 667 in the control)**

Illnesses	Intervention (%)			Control (%)		
	Baseline	Endline	%pt change	Baseline	Endline	%pt change
Know at least two symptoms of menstrual problems	67.3	67.3	0.0	41.1	41.9	0.8
Know at least two symptoms of RTI/STI	50.2	50.7	0.5	24.9	24.9	0.0
Know at least two symptoms of STI	12.4	12.9	0.5	1.8	2.0	0.2
Know at least two symptoms of any gynecological ailments	76.7	77.1	0.4	61.0	62.5	1.5
Know at least two symptoms about the spread of STI	0	42.1	42.1	0	24.3	24.3
<b>Total cases</b>	<b>596</b>	<b>596</b>	<b>596</b>	<b>667</b>	<b>667</b>	<b>667</b>

**Table 3: Level of awareness about pregnancy, delivery, post-natal complications in the study GPs using baseline and endline data (N: 596 in intervention & 667 in control)**

Illnesses	Intervention (%)			Control (%)		
	Baseline	Endline	%pt change	Baseline	Endline	%pt change
Know at least two symptoms about any antenatal complication	71.6	72.1	0.5	49.2	50.2	1.0
Know at least two symptoms about any delivery complication	54.9	55.3	0.4	27.6	28.9	1.3
Know at least two symptoms about any post-natal complication	52.0	52.7	0.7	29.4	30.1	0.5
Know at least two symptoms about any obstetric complication	83.1	88.4	5.3	71.5	71.5	0.0
<b>Total cases</b>	<b>596</b>	<b>596</b>	<b>596</b>	<b>667</b>	<b>667</b>	<b>667</b>

**Table 4: Self-reported symptoms of various general illnesses in the study GPs using baseline and endline data (N: 596 in the intervention & 667 in the control)**

Illnesses	Intervention (%)			Control (%)		
	Baseline	Endline	%pt change	Baseline	Endline	%pt change
Malaria	0.3	0.2	-0.1	0.3	0.0	-0.3
Tuberculosis	0.0	0.3	0.3	0.1	0.1	0
Diarrhoea	2.5	0.8	-1.7	1.5	1.0	-0.5
Pneumonia	0.0	0.0	0	0.1	0.0	-0.1
Asthma	0.5	0.0	-0.5	0.7	0.1	-0.6
Jaundice	3.5	0.5	-3	1.0	0.4	-0.6
High BP	1.0	0.8	-0.2	0.7	0.3	-0.4
Heart disease	0.8	0.3	-0.5	0.0	0.3	0.3
Fever (known cause)	6.0	0.3	-5.7	5.7	5.4	-0.3
Fever (unknown cause)	13.1	5.2	-7.9	16.0	7.0	-9
Cough (less than 15 days)	3.9	1.8	-2.1	4.0	0.9	-3.1
Gastritis	29.0	13.1	-15.9	14.7	6.0	-8.7
Kidney problem	0.2	0.2	0	0.3	0.1	-0.2
Nerve problem	0.0	0.0	0	0.6	0.4	-0.2
Anemia	0.5	0.7	0.2	1.0	0.0	-1
Filaria	0.2	0.5	0.3	0.1	0.0	-0.1
Chicken pox	0.0	0.2	0.2	0.9	0.1	-0.8
Diabetes	0.0	0.0	0	0.0	0.0	0
Gout	0.0	0.0	0	0.0	0.0	0
Goitre	0.0	0.0	0	0.0	0.0	0
Other	1.5	5.7	4.2	18.9	7.3	-11.6
<b>Any of the above</b>	<b>42.1</b>	<b>25.0</b>	<b>-17.1</b>	<b>52.3</b>	<b>27.0</b>	<b>-25.3</b>
<b>Total cases</b>	<b>596</b>	<b>596</b>	<b>596</b>	<b>667</b>	<b>667</b>	<b>667</b>

**Table 5: Self-reported symptoms of gynecological morbidity, STI/RTI and their spread in the study GPs using baseline and endline data (N: 596 in the intervention & 667 in the control)**

<b>Illnesses</b>	<b>Intervention (%)</b>			<b>Control (%)</b>		
	<b>Baseline</b>	<b>Endline</b>	<b>%pt change</b>	<b>Baseline</b>	<b>Endline</b>	<b>%pt change</b>
Menstrual problems	17.5	7.0	-10.5	29.5	20.9	-8.6
RTI/STI	43.0	19.6	-23.4	50.7	23.7	-27.0
Abnormal vaginal discharge	5.7	4.7	-1.0	8.2	7.8	-0.4
Any gynecological ailments	48.0	22.8	-25.2	61.2	35.1	-26.1
<b>Total cases</b>	<b>596</b>	<b>596</b>	<b>596</b>	<b>667</b>	<b>667</b>	<b>667</b>

## Appendix B

### Construction of Standard of Living Index

A summary household measure called *the standard of living index (SLI)*, which is calculated by adding the following scores:

*Electricity*: 2 if owns electricity, 0 if does not own;

*Mat*: 0 if does not own mat

*Pressure cooker*: 0 if does not own pressure cooker

*Chair*: 0 if does not own chair

*Bed*: 0 if does not own bed

*Electric fan*: 2 if owns electric fan, 0 if does not own

*Radio/television*: 2 if owns radio or television, 0 if does not own

*Black and white television*: 2 if owns black and white television, 0 if does not own

*Colour television*: 3 if owns colour television, 0 if does not own

*Sewing machine*: 2 if owns sewing machine, 0 if does not own

*Mobile/telephone*: 3 if owns mobile/telephone, 0 if does not own

*Computer*: 5 if owns computer, 0 if does not own

*Refrigerator*: 3 if owns refrigerator, 0 if does not own

*Wrist watch / wall clock*: 0 if does not own a clock

*Bicycle*: 2 if owns bicycle, 0 if does not own

*Scooter*: 3 if owns scooter, 0 if does not own

*Bullock pulled cart*: 2 if owns bullock cart, 0 if does not own

*Car*: 4 if owns car, 0 if does not own

*Water pump*: 2 if owns water pump, 0 if does not own

*Thresher*: 2 if owns thresher, 0 if does not own

*Tractor*: 4 if owns tractor, 0 if does not own

Index scores range from 0-14 for a low SLI to 15-24 for a medium SLI and 25-67 for a high SLI. By this measure more than half of the population in both the study sites have a low standard of living (64 percent in the intervention village and 61 percent in the control village), a little more than one-fifth (20.4 percent) of the population have medium standard of living in the intervention village and almost 3 out of 10 households (29.8 percent) in the control village have a medium standard of living. Minority of households in both the study



sites belong to high standard of living (15.5 percent in intervention village and 9.1 percent in control village).

## **Appendix C**

### **List of persons who were engaged in the project**

Persons involved in data collection in baseline and in endline surveys as investigators

1. Pampa Mondal
2. Banani Mondal
3. Jayabati Saha
4. Suchitra Mondal
5. Aradhana Bagdi
6. Chanda Goppe (only at the endline)
7. Meherunnessa Khatun
8. Rehena Khatun
9. ShabnamParveen
10. Nazneen Begum
11. Arpita Bhandari

Persons supervising the data collection in baseline and in endline surveys

1. Subhendu Pal
2. Pranab Mondal

Persons (RHCP) involved in the intervention activities

1. Firoz Ali
2. Rabindranath Ghosh
3. Brikodar Karmakar
4. Biswanath Mondal
5. Barnali Saha
6. Lalit Narayan pandit
7. Lalita Pandit
8. Roshnara Begum

Data entry operators who entered baseline, intervention and endline data at different points of time

1. Sanjib Ghosh Hazra
2. Suparna Roy
3. Nibedita Maity
4. Anirban Hazra

Research Associates at the IDSK during the project period at different time points

1. Srimoyee Bose
2. Moumita Mukherjee
3. Suvapriya Bannerjee
4. Manashi Saha