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# MANOSHI
## working paper

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Bidhan Krishna Sarker
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# EXECUTIVE SUMMARY

This cross-sectional study was conducted to capture maternal, neonatal and child health (MNCH) related knowledge and practices among the participants of Manoshi program and to explore the association between exposure to different Behavior Change Communication (BCC) approaches and changes in MNCH knowledge. This study also explored the acceptability of BCC materials among urban slum women, their families, and the community members as well as documented the behavior change interventions currently being used by the Manoshi program. Both quantitative and qualitative methods were applied to address the objectives of the study. Three areas of Manoshi program were randomly selected for conducting the quantitative component. The quantitative data were collected between November 2009 and May 2010. The qualitative data were collected between March 2010 and December 2010 through different qualitative methods including in-depth interview, focus group discussion, semi-structured interview, and observations of BCC events.

A total of 360 currently married women were interviewed in the quantitative survey and 99% of them were Muslim. The highest proportions (41%) of respondents were in the 21-25 years age group, and 63% of the respondents had completed primary education (grade 5). About 89% were homemakers by occupation and the mean number of members in the family was 4.8. Fifty percent of families reported monthly income of around 7300 taka (approximately US$100 in 2011). About 99% of respondents had knowledge about the requirement of antenatal care (ANC) and 45% of the respondents mentioned that 4 or more ANC are required during pregnancy. Study participants had some knowledge of danger signs during pregnancy, delivery, and postnatal period; they mentioned severe headache (59%), high fever (50%), convulsion (48%), excessive bleeding (47%), prolapse (52%), and prolonged labor (33%). Home was cited as desired place of delivery by 25% of respondents and 71% mentioned they would go to a government facility in the case of any complication during childbirth. Over 50% were aware of drying the baby after delivery and feeding colostrums. In addition, respondents reported knowledge on newborn care practices e.g., bathing the newborn at least 7 days after birth (8%), colostrums as newborn's first feeding (75%), initiation of breastfeeding within one hour (78%), and duration of exclusive breast feeding (87%).

About 95% mothers received at least one ANC and 74% of them received 4 or more in the quantitative survey. About 45% received their first ANC before 4 months

of gestation and 42% received at least one ANC from a skilled provider. About 43% of deliveries were conducted at home and 41% of deliveries were attended by medically trained providers. Regarding postnatal care (PNC), 74% received at least one PNC and 52% of the respondents received PNC on the same day of child birth, 33% received four or more PNC visits, and 53% received at least one PNC from a skilled provider. Regarding newborn and child care practices, 60% of babies were wiped and 52% were wrapped within 15 minutes after birth, 54% of babies were bathed for the first time between 3 to 7 days and for 60% hair was shaved between 3-30 days. Eighty-seven percent of babies were fed colostrums and 48% of respondents initiated breast feeding within one hour of childbirth. About 39% babies were exclusively breastfed for 6 months. Eighty-eight percent of babies received any vaccination. Self-reported exposure to Manoshi program BCC approaches were as follows: poster (75%), TV advertisement (69%), sticker (68%), face-to-face counseling (57%), folksong and street drama (9%). A statistically significant association was found between exposure to BCC approaches (TV advertisement, poster, leaflet, and sticker) and knowledge score ($P < 0.05$).

Most of the study participants considered BCC materials (posters and stickers) as being essential and the images of healthy mothers and children presented in these materials were well accepted by them. Similar to quantitative component, there was less exposure to leaflet, folk songs, and street drama among the qualitative study participants. Most of study participants stated that messages given in the BCC materials were incongruent with the images on the posters or stickers. Most of the women recommended alternatives for the maternal danger signs related stickers as they were embarrassed by some of the images. Barriers were found in keeping BCC materials at home: posters or stickers with human pictures were not allowed in any Muslim's prayer room; women felt ashamed to keep or hang stickers showing images of prolapse; slum houses made of tin and bamboo were not suitable to hang posters or stickers, and house owners did not allow them to hang them. Despite these barriers, study participants stated that BCC materials influenced them to change their MNCH care seeking behavior in many ways.

# INTRODUCTION

Over the past few decades, rapid urbanization has occurred throughout the developing world; today 80% of the world's big cities are located in developing countries and 60% of their inhabitants are slum dwellers [1]. In Bangladesh, nearly 25% of the population lives in urban areas and 33% of the urban population resides in urban slums [2]. According to the 2001 population census, the urban population in Bangladesh is 29 million and has increased at the rate of 38% during the last 10 years; roughly four times the rural rate [3]. Urban slum dwellers are exposed to poor environmental conditions such as overcrowding, poor quality drinking water and sanitation, and lack of removal of waste. Lack of knowledge and difficult living conditions in the slums contribute to limited utilization of health care and hygiene awareness, lack of accurate knowledge of the origin of sickness and appropriate treatments, improper food habits and breast feeding practices and low acceptance of vaccination [4, 5]. A review of health services for people who live in informal settlements in Dhaka city found that only 7.3% have access to a public health clinic [6].

Mothers and children living in the slums are at high risk of mortality and morbidity. For example, children in the slums of Nairobi, Kenya, have mortality rates much higher than those in rural Kenya (150.6 per 1,000 live births vs 113.0, respectively) [7]. Similarly, in Bangladesh the situation in urban slums is often worse than in rural and non-slum urban areas [8]. For example, the mortality rate in Bangladesh for children under the age of five is 65 per 1,000 live births but in urban slums it is approximately 81 per 1,000 live births. Similarly, neonatal and infant mortality are higher in urban slums than in rural areas; for both groups, mortality in urban slums is double that in non-slum areas. The neonatal mortality rate is 44 per 1,000 live births for urban slums versus 20 per 1,000 live births in non-slum areas; the infant mortality rate is 63 per 1,000 live births in urban slums compared to about 30 per 1,000 live births in urban non-slum areas [9-11]. Moreover, two separate child mortality patterns have been identified in Bangladesh: one for urban natives and another for rural-urban migrants with higher under-five mortality among rural-urban migrants compared to urban natives [12].

One reason behind the higher rates of mortality and morbidity in urban slums is limited use of health care services. Despite being located in close proximity to skilled care facilities, nearly 80 percent of deliveries in slums are conducted by neighbors or relatives at home and only 13 percent of births are assisted by skilled

attendants. Antenatal care (ANC) coverage is 55% in urban slums, which is much lower than the 74% found in urban non-slum areas. Immunization coverage in urban slums is also lower than the national and non-slum averages [2]. In a study in urban slums of Dhaka city, [13] have illustrated some economic and socio-cultural factors that impact the use of traditional and modern delivery care. They found that factors contributing to the use of traditional delivery care include low household income, high cost of care in hospitals, illiteracy, large family size, reliance on traditional system, lack of knowledge about modern facilities, social taboos and traditional belief and limited access to media and family planning program [13].

In addition to limited health care seeking, social norms and taboos lead to practices that are potentially harmful and may be responsible in part for the high levels of mortality noted earlier. These norms and practices have been documented in both rural and urban areas. Common harmful practices during pregnancy and childbirth include internal manipulation and massage, introduction of oils into the vagina, use of fundal pressure or tight abdominal bands during labor, pulling the umbilical cord, choking or inducing vomiting in the mother to expedite placental delivery, and not using uterine massage to prevent and treat postpartum hemorrhage [14]. Culturally, hospitalization of women is not considered important and pregnancy is not considered a risky event. The recent BDHS-2007 confirmed that 72 percent of women who did not seek antenatal care (ANC) thought that the check-up was not needed [10].

A cluster randomized controlled trial study in Uttar Pradesh, India reported by [15], revealed that community based behavior change intervention had a great improvement on neonatal health outcomes. The neonatal mortality rate was reduced by 54% in the intervention area compared to control area. Improvements in several care practices such as birth preparedness, hygienic delivery, umbilical cord care, skin care, thermal care, and breastfeeding were seen in the intervention area [15].

Several studies have emphasized the socio-cultural barriers that can limit women's use of professional care regardless of quality of care in the facility. For example, a qualitative study conducted in the *Korail* slum of Dhaka revealed a number of beliefs surrounding pregnancy and childbirth. The community considers a pregnant woman to be in a weakened state and therefore more susceptible to 'evil spirits'. Evil spirits are commonly thought to be the cause of any pregnancy mishap or complication that occurs. Incarceration at home is considered by many women to

be an important way to ensure protection from evil spirits and women take special precautions when they leave their homes such as covering their hair, carrying a piece of iron, some matches, or even the dried bones of a cow. When a pregnancy failure occurs, the woman herself is often blamed for not following these rituals and superstitions or for not being discrete enough during her pregnancy. For an example, women reported that abortions and stillbirth happened due to the result of *bhoot* action (ghost/demon) and for violating mobility or other restrictions [16]. Other beliefs included that a woman should not cut or twist anything during her pregnancy to prevent her baby from being born with a cleft lip or palate or with deformed features and that women should stay inside their homes and avoid lying down during an eclipse. Some food taboos during pregnancy were also found in the community. Many women followed dietary restrictions to protect themselves from harm and evil spirits during pregnancy. Specific types of fish such as *Mrigael, Pangaash, Baieng, Hilsha* and *Taki* were most commonly mentioned as fish to be avoided and there was a common belief that eating fish with big mouths could make the mouth of the child big. As proper food intake is very important during pregnancy, the community must be aware of accurate food and nutritional knowledge [16]. A mother may not take additional food during pregnancy due to the fear that the baby will grow too large making the delivery complicated. As a result, she may restrict the source of protein required for the healthy growth of the fetus due to food taboos and food behaviors.

The limited data from Dhaka slums provide some insight into the current state of knowledge and practices related to pregnancy and delivery. For example, a baseline survey conducted in 2007 showed that more than 90% of mothers in urban slums of Dhaka city knew that ANC, tetanus toxoid (TT) immunizations, and iron supplementation are required for a healthy pregnancy. On the other hand, only 45% of respondents knew that the required number of ANC visits were four or more [17]. Formative research has shown that people living in the slums are motivated to change their behaviors concerning pregnancy care. They recognize that maternal, neonatal and child health are problems and can identify priority areas [18].

BRAC, a leading non-governmental organization (NGO) in Bangladesh, has been delivering basic health services through a community based health intervention, the Essential Health Care (EHC) program, in selected urban slums of all city corporations of Bangladesh. This community based health program known as *Manoshi* is aiming to reduce maternal, neonatal, and child mortality in the urban

slums of Bangladesh. A Behavior Change Communication (BCC) intervention is one of *Manoshi's* major components. The BCC component aims to raise awareness and create behavior change based on BRAC-developed BCC messages and identified message delivery channels. In the middle of 2007, the *Manoshi* project began delivering BCC messages in the community using those channels. The target audiences of its' BCC efforts were newly married couples, eligible couples (married women of reproductive age between 15-49 years having at least one pregnancy and currently married), pregnant and lactating mothers and their family members, and general community members. The purpose of this study was to assess the selected MNCH-related knowledge and practices among the urban slum women in relation to the *Manoshi* BCC intervention and explore the acceptability of BCC tools among the target audiences as well as community members.

## OBJECTIVES

The overall objective of this study was to assess the process of delivery of the key messages and to identify the results of the behavior change communication (BCC) messages delivered through *Manoshi*. The specific aims of the study were to:

- Document the behavior change interventions currently being used by the *Manoshi* program;
- Assess knowledge and practices in terms of selected BCC messages in the program area of *Manoshi*;
- Determine the acceptability and use of current BCC materials by urban slum women, their families, and the community

# METHODS

This cross-sectional study applied both quantitative and qualitative research methods. Quantitative research methods were applied to assess knowledge and practices in terms of selected BCC messages in the program area of *Manoshi* while qualitative research methods were used to document the behavior change interventions currently being used by the *Manoshi* program and to determine the acceptability and use of current BCC materials by urban women, their families, and the community members. This report will describe the quantitative and qualitative methods of this study in two sections.

## Quantitative Component

### *Study area and population and study tool*

The quantitative methods were administered to capture information on MNCH-related knowledge and practices among women living in slum areas for at least one year and who had delivered a live baby within one year prior to the date of interview. Data collection was carried out in three slums of Dhaka City (*Korail, Shyampur, Kamrangir Char*) between November 2009 to May 2010. The quantitative survey also explored the association between BCC interventions and MNCH knowledge. A structured questionnaire was developed to collect information on socio-demographic status, obstetric history, birth experience, knowledge of antenatal care, delivery care, postnatal care, danger signs of pregnancy, neonatal care, danger signs of newborns, breastfeeding, immunization, childcare regarding diarrhea and respiratory problems, danger signs in children, and the sources of information updated the study participants regarding MNCH.

### *Sampling*

The sample size was calculated based on selected variables covering both MNCH knowledge and practice and assuming a 50% increase from the baseline survey and a 10% non-response rate. It was determined that a sample of 354 mothers was required. A total of 360 mothers were interviewed. The three areas of the study were selected randomly from a list of *Manoshi* program areas of Dhaka City. The number of sample from each of the areas was proportionate to the population size of that particular area. In each slum the data collectors demarcated the central point and the direction of collection of study samples was determined by spinning a bottle. The data collectors went to each house in the specific direction and screened for eligible participants. Eligible participants were identified and interviewed

after obtaining their consent. The women who experienced a stillbirth in their last delivery and women with mental impairment were excluded from the study.

***Data collection and analysis***

Trained and experienced male and female interviewers were involved in the data collection. The survey questionnaire took about one hour to administer. To ensure the quality of data, cross checking was done regularly and the supervisors monitored the data collection activities and re-interviewed when necessary. Double entry of data was done in templates developed using "SPSS" and "Oracle" software. SPSS and STATA software were utilized for data analysis. Descriptive analysis was performed to report various characteristics of the study population. In order to test the statistical difference between categorical variables in the study chi-square tests were performed. A knowledge scoring procedure was developed with the selected MNCH-related variables. Each correct answer was scored as '1' and each wrong answer was scored as '0'; there was no negative scoring. The total score of each individual was aggregated and a percentage was calculated based on total possible score. As per knowledge score, participants were divided into two groups where mean and above mean scores were determined as 'having good knowledge' and below mean scores were determined as 'having poor knowledge'. To explore the association between exposure to BCC approaches and poor and good level of knowledge logistic regression analysis was performed.

## Qualitative Component

***Study area and population***

Qualitative data were collected between March 2010 and December 2010. In-depth interviews (IDI) and Focus Group Discussions (FGD) were conducted in *Gulshan, Shyampur* and *Kamrangir char* slums while observation and semi-structured interviews were conducted in additional three slums (*Shabujbag, Mohammadpur and Uttara*) of Dhaka City. Data were collected from individuals and communities targeted by the Manoshi program for the delivery of BCC messages as well as from those individuals who can influence *Manoshi* target audiences. Women who have been living in the slum for at least one year and became pregnant or delivered a live baby within one month of the date of interview, and their husbands were the participants for IDI. FGDs were carried out among different groups in the community including; village doctors, *Manoshi* MNCH committees, and *Manoshi* Women Support Groups (WSG).

### *Study tools and sample size*

Qualitative study tools included semi-structured interview, observation, IDI, and FGD. Separate guidelines for in-depth interview, semi-structure interview, and FGD were developed. An observation checklist was introduced to document the process of different BCC events. Three researchers (one facilitator, one note taker and one gatekeeper) were present during the FGDs. The IDIs and FGDs were audio-taped. A detailed description of the study tools is given below.

| Tools/methods | Description of sample size | Total |
|---|---|---|
| Semi structured interview | In order to document the BCC interventions being used by the *Manoshi* program, semi-structured interviews were conducted with BRAC staff members involved in implementing BCC interventions. The interviewees included; Branch Manager (BM), Program Organizer (PO), Shasthya Kormi (SK), and Shahthya Sebika (SS). A total of 41 semi-structured interviews were conducted (6 with BM, 11 with PO, 12 with SK, and 12 with SS). | 41 |
| Observation | Events to disseminate the BCC messages in to the community were observed. The events included; expected date of delivery (EDD) meeting, MNCH committee meeting, WSG meetings, spouse forum meeting (SF), street drama, and folk song. A total of 38 events were observed (5 WSG meetings, 5 MNCH committee meetings, 5 SF, 10 EDD meetings, 9 street drama, and 4 folk song events). | 38 |
| In-depth Interview (IDI) | Women who had been living in the slum for at least one year and were pregnant or delivered a live baby within one month of the date of interview and their husband were interviewed. A total of 66 IDIs were conducted and among them 41 interviews were with women and 25 interviews were with their husbands. | 66 |
| Focus Group Discussion (FGD) | Focus group discussions among different groups in the community including village doctors, MNCH committees, and WSG were carried out. A total of 7 FGDs involving 51 participants were conducted. Among the FGD participants 29 were male and 22 were female. | 07 |

*Data analysis*

We used different qualitative methods to explore the acceptability and document the current BCC intervention provided by the *Manoshi* program. Six researchers were recruited by icddr,b *Mansohi* team.

Qualitative data were transcribed and verified for accuracy and consistency. Each IDI, FGD, observation and semi-structured interview was transcribed in Bangla as Microsoft word documents. A thematic framework approach was used for analyzing the transcripts. The approach involved reading the transcripts to identify emerging sub-themes based on the study objectives and code them and then group them into main themes. Coded data were compiled and scrutinized by manual analysis using content analysis techniques. The analyzed findings were then summarized in English. These sub-themes were compiled for grouping into responses under main themes. In addition, the narratives of the respondents were presented under different themes. All analyses were done manually.

# RESULTS

## Description of BCC intervention

BCC is one of the key components of the *Manoshi* program and since 2007 BRAC has been implementing a number of approaches to promote positive MNCH behaviors and practices. Manoshi developed key messages for behavior change and applied different means of communication using different BRAC health staff including the community health volunteers (*Shasthya Sebika*) and community health workers (*Shasthya Karmi*, Program Organizer). The key BCC messages delivered by the program were: 1) at least 3 ANC check-ups are required during pregnancy; 2) eat at least one more fistful of food at every meal and drink more water and liquids during pregnancy; 3) reduce mental stress and take time for proper physical rest 4) ensure that deliveries take place at a BRAC *Manoshi* delivery centre (birthing hut); 5) use proper family planning methods after 42 days of delivery of the baby; 6) use clean pad after delivery and keep the birth passage dry and clean; 7) family members should take care of pregnant and lactating mothers; 8) inform BRAC health workers immediately if any danger signs develop with the mother; 9) wrap the whole body of the baby with clean cloths and always keep the baby warm; 10) initiate colostrum feeding; 11) keep the umbilical stump dry and wait to bathe the newborn for at least seven days after birth; 12) inform BRAC health workers immediately if there is any danger sign of neonate; 13) exclusively breast feed up to six months and start complementary feeding from the seventh month; 14) immunize the baby against seven infectious diseases; 15) use oral re-

hydration solution (ORS) for diarrhea; 16) if the baby has rapid breathing, chest in-drawing, respiratory problem or any other danger sign, inform BRAC health workers immediately. Messages describing maternal, neonatal and child danger signs were also provided as part of the BCC intervention. The eight different methods of delivering the *Manoshi* BCC messages are described in Table 1.

**Table 1: Manoshi BCC interventions**

| BCC tools | Description of the BCC tools |
|---|---|
| One to one contact | Face-to-face counseling: Community health volunteers and community health workers (SS, SK, and PO) provide face-to-face counseling to targeted program participants with selected BCC messages during their regular field visits when providing antenatal, delivery, postnatal, neonatal, and child care. |
| Group meetings | Group counseling: *Manoshi* has formed groups with different people in the community and disseminates BCC messages along with other activities. Group counseling takes place once a month with these groups namely, MNCH committee, EDD (formed with 7-9 months of pregnant mother) meeting, and Women Support Group (local influential women who specially help and encourage pregnant women to come to BRAC delivery centres), etc. |
| Leaflet | Previously mentioned seventeen key messages are delivered to the community through leaflets. Leaflets are mainly distributed to community participants during folksong and street drama events organized in the area. Among the 17 key messages, 8 messages are focused on maternal, 5 messages are focused on neonatal and 4 messages are focused on child health. |
| Posters | Health Workers deliver 4 posters among pregnant women and lactating mothers regarding the MNCH-related BCC messages. Based on the content of the posters, they are being delivered to mothers during pregnancy or after delivery. Details of each posters are described below:<br><br>Poster-1 (healthy mother and child): The poster has a photograph of a healthy looking mother and a child. The following message is given in the poster with an emergency mobile number at the bottom: "If you find any problem with pregnant woman don't be late. We want healthy mother, healthy child, and healthy neonate". |

| BCC tools | Description of the BCC tools |
|---|---|
| | Poster-2 (danger signs in children): The poster has images of newborns with danger signs including inability to suck or breast feed, fever or cold, continuous vomiting, chest in drawing, skin pustules, umbilical infection, convulsion, and lethargy. In addition, the poster tells. "If any of the signs is detected go to the hospital with your baby".<br><br>Poster-3 (Signs of pneumonia and remedies): The poster depicts the signs of pneumonia and its remedies. There are five images. One of the images is about a baby having rapid breathing. The other images tell the audience what to do. The action steps include keeping the baby warm, giving the baby Cotrimoxazole syrup, clearing nose, and breastfeeding frequently.<br><br>Poster-4 (Management of diarrhoea): This poster depicts what to do when a child suffers from diarrhoea. The management of diarrhea has been described for the children less than and more than 7 months. Messages for children less than seven months old include giving the baby oral rehydration saline (ORS) after every loose stool, continuing breast-feeding along with ORS, and if the ORS. It has a re-assuring message that if breast-feeding continue the baby will recover soon. Each of the messages has a corresponding image. Messages for more than seven months old child include providing nutritious food to the baby frequently along with ORS, giving the baby ORS after every loose stool and continuing breast-feeding along with ORS. Each of the messages has a corresponding image.<br><br>In the center of the poster the process of preparing ORS has been described. The process is as follows: "take a pot of a half litre boiled cold water and mix the packet of ORS completely" |
| Stickers | Two types of stickers have been distributed in the program area. Stickers regarding maternal danger signs are provided during pregnancy while the other one is given to the mother after delivery. Details of each stickers are given below:<br><br>Sticker-1: The sticker is about 'five danger signs of pregnancy, delivery, and post delivery period'. The danger signs include high fever; severe headache and blurring of vision; prolonged labor; convulsion; and hemorrhage or excessive bleeding. |

| BCC tools | Description of the BCC tools |
|---|---|
| | Sticker-2: The sticker has images of newborns with danger signs including inability to suck or breast feed, fever or cold, continuous vomiting, chest indrawing, skin pustules, umbilical infection, convulsion, and lethargy. In addition, the sticker tells; if any of the signs is detected go to the hospital with your baby.<br><br>*There is a symbol of mobile phone at the bottom of each poster and sticker with space to write an emergency phone number of a BRAC employee, which can be contacted in case of emergency.* |
| TV spot | TV spot: A one and half minute TV spot is being broadcast to the community through the video channel of local satellite cable connection providers. It is usually broadcast 10 to 12 times in a day while broadcasting Bengali or Hindi cinema through the local DVD channel. This TV spot mainly focuses on the five danger signs of pregnancy and the given message is 'BRAC established delivery centres in urban slums for normal safe delivery but if any woman develops any of the danger signs of childbirth, do not be late and go to a hospital'. |
| Folksong | Folk song: Manoshi program hired a team to organize these events. The MNCH care related BCC messages are disseminated by the professional artist of the team. This event is usually organized between October to April to avoid rainy season and at least one event per year takes place in the BRAC delivery centre catchment area. |
| Street Drama | Street Drama: Manoshi program hired a team to organize these events. The MNCH care related BCC messages are being provided through the artist of the team. This event is usually organized between October to April to avoid rainy time and at least two events per year per BRAC Delivery Centre catchment area. |

## Results from quantitative component

### *Socio-demographic information of the study participants*

Table 2 shows that highest proportion (41%) of respondents was between 21 and 25 years of age (mean 23.9 years) and the majority (99%) were Muslim. A substantial proportion (42%) of respondents had completed some form of secondary education between grades 6 to 9 while 22% were illiterate. About 89% were homemakers

and the mean number of family members was 4.8. This table also shows that 50% of the families had monthly income up to 7,300 Taka (roughly US$ 100). The majority (59%) of respondents got married before the age of 18 years and 31% got married between 18 and 20 years. Thirty percent of the respondents gave birth to more than two children and 23% had more than two living children.

**Table 2: Background characteristics of study participants**

| Socio-economic characteristic | Distribution | % (n=360) |
|---|---|---|
| Age (in years) | 15-20 | 30.0 |
| | 21-25 | 41.0 |
| | 25+ | 29.0 |
| Religion | Muslim | 99.0 |
| | Hindu | 01.0 |
| Education | No education | 22.0 |
| | Incomplete primary education | 16.0 |
| | Complete primary education | 20.0 |
| | Incomplete secondary education | 28.0 |
| | Secondary and above | 14.0 |
| Major occupation | Not involved in income generation | 89.0 |
| | Handicraft/ small business | 05.0 |
| | Factory labor | 02.0 |
| | Service | 1.5 |
| | Others | 2.5 |
| Number of family members | <=3 | 28.0 |
| | 4-5 | 46.0 |
| | 5+ | 26.0 |
| Monthly self income on average (Tk) | No income | 89.0 |
| | <=1000 | 5.0 |
| | 1001-3000 | 4.0 |
| | 3000+ | 2.0 |
| Monthly family income on average (Tk) | <=5000 | 24.0 |
| | 5001-10000 | 48.0 |
| | 10001-15000 | 11.0 |
| | 15000+ | 17.0 |
| Age at first marriage | <18 years | 59.0 |
| | 18-20 years | 31.0 |
| | 20+ years | 10.0 |

| Socio-economic characteristic | Distribution | % (n=360) |
|---|---|---|
| Total number of child birth | 1 | 43.0 |
| | 2 | 30.0 |
| | 2+ | 27.0 |
| Number of living child | 1 | 47.0 |
| | 2 | 31.0 |
| | 2+ | 23.0 |

**Table 3: Knowledge on selected maternal health messages**

| Maternal health messages | Response (%) |
|---|---|
| What should a woman do about her care during pregnancy* | |
| Eat at least one fist more at every meal | 48.0 |
| Drink more water and liquids | 21.0 |
| Keep sound mind and be happy | 2.0 |
| Take additional rest | 27.0 |
| Not to perform heavy work | 53.0 |
| The conditions that make a delivery clean* | |
| Clean or wash hands | 31.0 |
| Wear gloves/apron | 5.0 |
| Clean perineum | 18.0 |
| Nothing unclean introduced into the vagina | 3.0 |
| Clean delivery surface | 58.0 |
| Safe clean blade to cut the cord | 37.5 |
| Use clean thread to tie cord | 35.0 |
| Clean cord care | 7.5 |
| Use clean pad after delivery | 16.0 |
| Where a woman should have her delivery | |
| At BRAC delivery center | 21.1 |
| At Home | 25.0 |
| At Government facility | 32.0 |
| At Private facility | 22.5 |
| Person should take care of pregnant and lactating mother at home* | |
| Husband | 90.0 |
| Mother-in-law | 51.0 |
| Mother | 42.5 |
| All family members | 10.0 |

| Maternal health messages | Response (%) |
|---|---|
| Knowledge on Antenatal care | |
| Antenatal care is required for a pregnant women | 99.0 |
| At least 3 ANC check-ups are needed | 19.0 |
| At least 4 or more ANC check-ups are needed | 45.0 |
| Knowledge on pregnancy and delivery complications* | |
| Severe headache | 59.0 |
| High fever | 50.0 |
| Blurring of vision | 36.0 |
| Edema | 32.5 |
| Convulsion | 48.0 |
| Excessive bleeding | 48.0 |
| Prolong labor | 32.0 |
| Prolapsed/mal presentation | 52.0 |
| Severe abdominal pain | 25.0 |
| Knowledge about the treatment places to go for pregnancy and delivery complications* | |
| Government Hospital | 62.0 |
| Private clinic or hospital | 56.0 |
| Doctor's private chamber | 35.5 |
| BRAC delivery center | 7.5 |
| Other NGO Health Center | 7.0 |
| When a woman should start using a family planning method after delivery | |
| <40 days | 4.0 |
| 40-49 days | 66.0 |
| >49 days | 9.0 |
| Don't Know | 21.0 |

* indicates multiple responses

Table 3 shows information about participant's knowledge on maternal health. A majority of respondents (53%) correctly cited about not performing heavy work during pregnancy and 48% mentioned the need to eat more foods spontaneously. Regarding the place of delivery, home was mentioned by 25% respondents, 54% mentioned the facility (government and private combined), and 21% stated BRAC delivery centers. About 58% women mentioned the need for clean delivery surface. Ninety percent women expressed that a husband should take care of his wife during and just after pregnancy. Regarding the necessity of antenatal care 99%

mentioned the requirement of ANC, and 19% stated that at least 3 ANC check-ups are needed during pregnancy. The level of knowledge regarding pregnancy and delivery danger signs or complications recoded were severe headache (59%), high fever (50%), convulsion (48%), excessive bleeding (47%), prolapse (52%) and prolonged labor and edema (32%). (Multiple responses were allowed). Almost three-quarters of women (71%) mentioned government health facility as the place to go to during pregnancy and delivery complications. About 66% of women reported correct knowledge about when to start family planning methods after delivery.

**Table 4: Knowledge level on selected Newborn and Child healthcare indicators**

| Knowledge on Newborn and Child care | % (n=360) |
|---|---|
| What are the essential immediate newborn care required just after birth | |
| Drying thoroughly | 55.0 |
| Wrapping with warm clothes | 39.0 |
| Feeding colostrums | 54.0 |
| Cord care | 21.0 |
| Give the newborn a bath at least after 7 days of birth | 8.0 |
| What should be newborn's first feeding just after birth | |
| Colostrums | 75.0 |
| Honey | 21.0 |
| When initiation of breastfeeding should be done | |
| Just after birth | 78.0 |
| <24 hours of birth | 11.0 |
| Second day | 3.0 |
| After second day | 1.0 |
| What should be the duration of exclusive breastfeeding | |
| 1-5 months | 8.0 |
| 6 months | 87.0 |
| When a mother should feed her baby supplementary foods | |
| <=5 Months | 3.0 |
| 6 Months | 49.0 |
| 7 Months | 44.0 |
| >7 months | 1.0 |
| Don't Know | 2.0 |

| Knowledge on Newborn and Child care | % (n=360) |
|---|---|
| What are the serious health problems for newborn | |
| Difficulty in breathing | 55.0 |
| Unable to suck | 4.0 |
| Jaundice | 34.0 |
| Fever | 72.0 |
| Convulsion | 12.0 |
| Lethargy | 3.0 |
| Umbilical discharge | 12.0 |
| Red eyes with discharge | 11.0 |
| What are the signs of pneumonia | |
| Fever | 45.0 |
| Cough | 40.0 |
| Breathing difficulty | 69.0 |
| Chest in-drawing | 25.0 |
| Vaccinations are needed for the 7 infectious disease to protect baby | 7.0 |
| Oral rehydration saline (ORS) is essential during diarrhea | 91.0 |
| Amount of food should be given to under-5 children with diarrhoea | |
| Usual diet | 26.0 |
| Less food than usual | 14.0 |
| More food than usual | 59.0 |

Table 4 describes women's knowledge about newborn and childcare practices. Regarding essential newborn care, more than 50% of respondents were aware of drying the baby and feeding the colostrum. Only 8% of respondents had knowledge that the newborn should be bathed after seven days of birth. Although most of the women (75%) had mentioned that colostrum should be the first feed to newborn, a large number of respondents (21%) mentioned that honey should be the newborn's first feed. Seventy-eight percent of women responded that breastfeeding initiation should be within one hour of birth. About 87% had correct knowledge about the duration of exclusive breast feeding but 56% could not correctly mention the age of the baby when supplementary feeding should start.

**Table 5: Maternal health care practices**

| Practices | (%) |
|---|---|
| Antenatal care | |
| Received any antenatal care | 95.0 |
| Received at least 3 Antenatal check –ups | 15.0 |
| Received 4 or more number of antenatal care | 74.0 |
| Timing of first ANC check-ups during pregnancy | |
| <4 months | 45.0 |
| 4-5 months | 38.0 |
| 6-7 months | 13.0 |
| Median number of ANC visit | 4.0 |
| Most of the ANC received from a skilled provider | |
| Yes | 42.0 |
| No | 58.0 |
| Place of Delivery | |
| Home | 43.0 |
| Government hospital | 22.0 |
| Private clinic/ hospital | 14.5 |
| BRAC delivery center | 16.5 |
| Other NGO health center | 04.0 |
| Assistance during delivery (who actually caught the baby) | |
| Medically trained provider | 41.0 |
| Received any PNC | 74.0 |
| When the first PNC received | |
| On the same day | 52.1 |
| Between 1-2 days | 26.0 |
| Between 3-7 days | 12.8 |
| Between 8-30 days | 7.6 |
| After 1 month | 1.5 |
| Number of PNC received | |
| 1 time | 26.0 |
| 2 times | 21.1 |
| 3 times | 20.4 |
| >= 4 times | 32.5 |
| Most of the PNC received from any skilled provider | 52.8% |
| Women received any advice on family planning after the delivery | 63.3% |

Table 5 shows maternal care practices among the study participants. About 95% of respondents received any antenatal care and 74% received 4 or more than 4 antenatal care visits. About 45% received their first ANC before 4 months of gestation and 38% received their first ANC between 4-5 months of pregnancy. Forty-two percent received most of their ANC from a skilled provider. Forty-three percent of deliveries were conducted at home and 41% of deliveries were attended by medically trained providers. About 74% mothers received at least one postnatal care after their last delivery while 52% received PNC on the same day of childbirth and 33% received 4 or more PNC. About 53% mother received most of their PNC from skilled providers.

**Table 6: Neonatal and child care practices**

| Neonatal and Child care practice | % (n=360) |
|---|---|
| How long after delivery the baby was wiped (drying) | |
| Within 15 minutes | 60.0 |
| 16-30 minutes | 3.0 |
| Did not | 10.0 |
| Do not know | 27.5 |
| How long after the delivery baby was wrapped | |
| Within 15 minutes | 52.0 |
| 16-30 minutes | 8.0 |
| Did not | 9.0 |
| Do not know | 31.0 |
| How long after delivery the baby was bathed for first time | |
| Within 1 hour | 15.0 |
| Within 24 hours | 17.5 |
| 2nd day | 6.0 |
| 3-7 days | 54.0 |
| >7 days | 7.5 |
| How long after delivery the baby's hair was first shaved | |
| Up to 2nd day | 2.0 |
| 3rd day-1 month | 60.0 |
| After 1 month | 33.0 |
| Not cut yet | 5.0 |
| Colostrums fed to baby just after birth | 87.0 |

| Neonatal and Child care practice | % (n=360) |
|---|---|
| Initiation of breastfeeding | |
| Within one hour | 47.0 |
| 1-23 hours of birth | 46.0 |
| After first day | 7.0 |
| Babies were exclusively breastfed | 39.0 |
| Supplementary foods were started | |
| Between 1-3 months | 10.0 |
| Between 4-5 months | 11.0 |
| After 6 months | 36.0 |
| Yet to start | 43.0 |
| Ever received any of vaccinations | 88.0 |

From Table 6 we find the majority (60%) of babies were wiped and wrapped (52%) within 15 minutes after birth. About half (54%) of the babies were bathed for the first time between 3 to 7 days and 60% shaved hair between 3-30 days. Eighty seven percent babies were fed colostrums and 48% of mothers initiated breastfeeding within one hour. Only 19% of babies were exclusively breastfed for 6 months and 88% of babies received at least one vaccination during the study period.

### *Changes in knowledge and practices since baseline on selected maternal and newborn care*

The data were compared with findings from the baseline survey carried out in 2007 just after the beginning of *Manoshi*. The following figure shows that knowledge on most of the pregnancy related complications increased over time (Figure-1). We found that study participants were more knowledgeable than the baseline period except few cases.

Figure 2 shows that significant changes were made in maternal and newborn care practices. Despite the lower knowledge level in terms of recommended number of antenatal care visits, 71% of women received antenatal care for 4 or more times. Home delivery decreased by 41%. Use of BRAC delivery centre as a place of delivery for the slum women increased from 1% to 16%. Assistance during delivery by trained professional (doctor) increased to 38% from 8%. PNC uptake, colostrum feeding increased by 28% and 52% respectively. Practice for newborn's

bathing just after birth reduced from 55% to 14%. Similarly, shaving of newborn's hair between 3 to 7 days of birth reduced by 30% since baseline.

**Figure 1: Changes in knowledge regarding maternal danger signs since baseline**

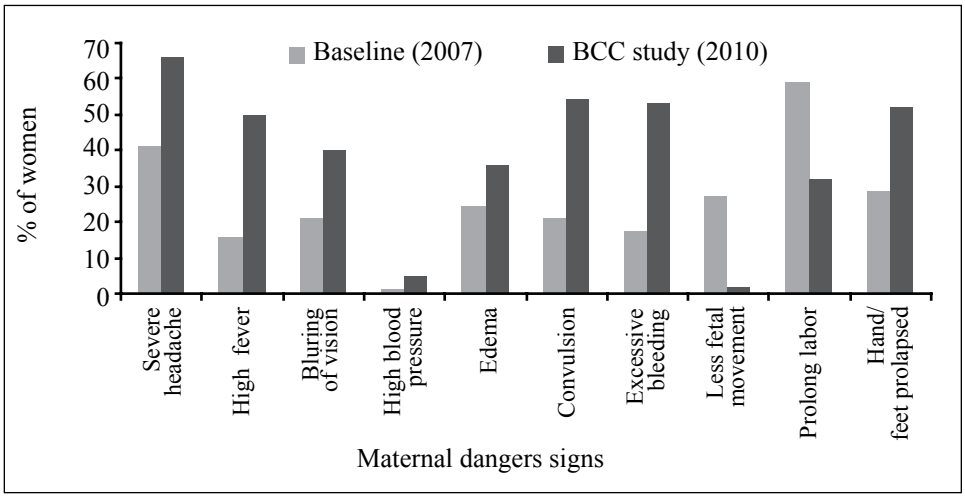


**Figure 2: Changes in practices regarding maternal and newborn cares since baseline**

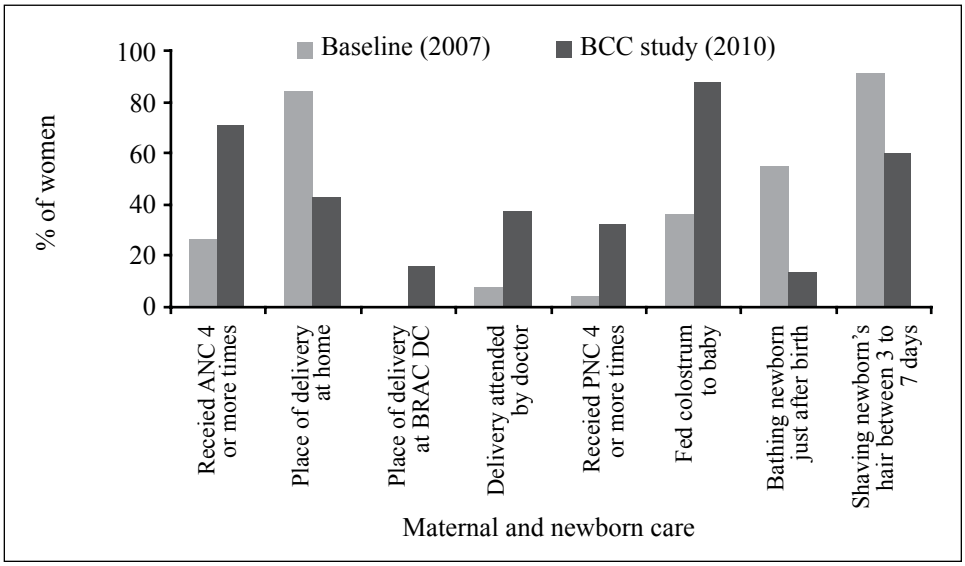

**Table 7: Self-reported exposure to different BCC channels of *Manoshi* program**

| BCC Channel | (%) n=360 |
|---|---|
| Poster | 74.7 |
| TV spot | 69.1 |
| Sticker | 68.1 |
| Face to face counseling | 57.2 |
| Group counseling | 11.4 |
| Folksong | 9.2 |
| Street Drama | 9.2 |
| Leaflet | 4.7 |

As shown in Table 7, a large number of respondents (75%) were exposed to at least one poster. In addition, 69% were exposed to the TV spot, 68% were exposed to sticker, 57% were exposed to face-to-face counseling, and only 11% were exposed to group counseling. There was less exposure to leaflet, street drama, and folksong BCC channels.

### *Knowledge score and its association with Manoshi BCC intervention*

A knowledge scoring procedure was developed with the selected MNCH-related questions that were asked to the respondents. Each correct answer was scored as '1' and each incorrect answer was scored as '0'; there was no negative scoring. The total score of each individual was aggregated and a percentage was calculated based on total possible score. As per knowledge score, the participants were divided into two groups where mean and above mean scores were determined as 'having good knowledge' and below mean score were determined as 'having poor knowledge'.

A comparison was done between poor and good knowledge in-terms of having been exposed or not exposed to each of the different BCC channels. Table 8 shows that the odds of having good knowledge among those exposed to group counseling is two times more than those who are not exposed to group counseling and this is statistically significant at the .05 level (Adj OR= 2.30, 95% CI: 1.03-5.12, p=0.042).

**Table 8: Determinants of maternal and child health knowledge by BCC intervention**

| Variables (Interventions) | Unadjusted OR (CI) | P value | Adjusted OR (CI) | P value |
|---|---|---|---|---|
| Group counseling | | | | |
| Not exposed | 1 | | 1 | |
| Exposed | 1.94 (0.98-3.84) | 0.057 | 2.30 (1.03-5.12) | 0.042 |
| Face to face counseling | | | | |
| Not exposed | 1 | | 1 | |
| Exposed | 1.08 (0.71-1.64) | 0.709 | 0.95 (0.53-1.68) | 0.853 |
| TV spot | | | | |
| Not exposed | 1 | | 1 | |
| Exposed | 2.52 (1.58-3.99) | 0.000 | 2.84 (1.56-5.17) | 0.001 |
| Folk song | | | | |
| Not exposed | 1 | | 1 | |
| Exposed | 1.30 (0.63-2.68) | 0.710 | 0.74 (0.28-1.96) | 0.540 |
| Poster | | | | |
| Not exposed | 1 | | 1 | |
| Exposed | 1.81 (1.12-2.94) | 0.016 | 1.30 (0.68-2.48) | 0.429 |
| Leaflet | | | | |
| Not exposed | 1 | | 1 | |
| Exposed | 3.19 (1.02-9.99) | 0.046 | 3.82 (1.09-13.39) | 0.037 |
| Sticker | | | | |
| Not exposed | 1 | | 1 | |
| Exposed | 2.11 (1.34-3.31) | 0.001 | 2.29 (1.26-4.17) | 0.007 |
| Street play | | | | |
| Not exposed | 1 | | 1 | |
| Exposed | 1.14 (0.55-2.33) | 0.729 | 1.12 (0.44-2.83) | 0.819 |

Among all the BCC tools, TV spot (Adj OR= 2.84, 95% CI: 1.56-5.17, p =0.001) and sticker (Adj OR= 2.29, 95% CI: 1.26-4.17, p =0.007) were found more likely to be associated with a 'good' maternal and neonatal health knowledge score and were highly significant. No significant association was found between face-to-face counseling, poster, folksong, and street drama and a good knowledge score.

# RESULTS FROM QUALITATIVE COMPONENT

This component of the study explored the acceptability of BCC materials among urban slum women, their families, and the community members and to document the behavior change interventions being used by the *Manoshi* program. Here, we tried to explore community feedback on each of the *Manoshi* BCC materials or tools separately through IDI and FGD. We considered several aspects of acceptability of BCC channels and messages such as; primary impression on BCC materials or channels, care and maintenance of the BCC materials by the recipient at home, conflict between cultural or religious practice and delivered BCC message or materials, influence of BCC message in practice, and recommendations from the community for improving the acceptability of BCC materials or messages. Findings from the qualitative analysis are described in the following sections.

## Community feedback on leaflet

***Primary impression on leaflet***

Only a few participants were exposed to the leaflets. Participants mentioned that leaflet had only narrative messages and without any image it was hard to communicate its message with the illiterate community. In addition, they also mentioned that font size of the leaflet was too small to read properly.

***Preserving the leaflet***

Most of the study participants had no willingness or interest to keep this BCC material with them.

***Conflict with delivered BCC materials or message***

No conflict was found regarding the leaflet among the respondents.

***Influence of BCC message on practice***

Although very few were exposed to the leaflet. Those who were exposed described how they were influenced by the leaflet. One woman said that she learned about the duration of exclusive breastfeeding and when the baby should start supplementary feeding from the leaflet. Another mentioned that through this leaflet she could learn a lot, understand more, and improve her knowledge. She added, *"Now I have the confidence to manage complications of my baby's illness."* (ID-17, Female, Edu-0)

***Community recommendations on the leaflet***
Many respondents mentioned that if the messages included in the leaflet were expressed with images or symbolic impressions, it would be more acceptable to the community. Font size of the letters in the leaflet should also be larger in order to read it properly.

## Community feedback on poster (1-4)

***Primary impression on posters***
Poster-1: About half of the participants were exposed, however the majority of them could not appropriately recall what the poster was about.

Poster-2: One-third of participants were exposed and the majority could recognize what the poster was about. However, about half of the participants stated that the image of the baby's body, especially the baby with skin pustules, should be removed and the baby should not be naked.

Poster-3: One-third of participants were exposed and one-half of them mentioned accurately the message written and images drawn in the poster. The women who were illiterate did not understand the Pneumonia poster properly and they could not recognize the type of illness the child was suffering from. They could only understand the picture showing the nose of the child was being cleaned. They thought that child was suffering from fever as the baby was seen wrapped with cloth. Picture showing the child unable to suck the breast was considered very odd looking for women.

Poster-4: One-third of the participants from IDIs were exposed to the poster. Many respondents could not understand what to do with the children who were less than seven months and more than seven months. They did not understand the picture showing the child being fed nutritious food along with ORS. They also misunderstood by thinking that the child was healthy and that is why he was being fed vegetables.

***Preserving the posters***
Poster-1: Half of the exposed respondents showed their interest to keep this material with them like a general poster available in the market. However, only one-fourth of exposed participants really wanted to keep this poster in order to use the emergency contact during pregnancy or childbirth related complications.

Poster-2: Participants mentioned that this poster is useful for keeping the emergency contact during neonatal complications and also helpful to advise community people.

Poster-3: Poster related to pneumonia was preserved in the room by many informants. According to them it is very useful to know how to take care of the baby. In addition they can also disseminate the messages among neighbors.

Poster-4: Almost all exposed respondents had willingness to keep this poster which can be used for raising awareness among those who did not know how to prepare ORS at home. The image was especially useful for the illiterate people. No exposed participant complained about the image of this poster for displaying it in their home.

Few barriers were mentioned by the respondents to displaying posters in their home. A few of them stated that they could not preserve or hang the poster due to fear of house owner. The majority of respondents were living in a rented house and the house owner did not allow them to make a hole by driving a nail into the wall to hang the poster. Moreover, the wall paint would be damaged after sticking the poster with adhesive or sticky tape. Frequent migration to another slum or places was another reason for not keeping the poster for a long time. Many of them admitted that they lost the poster while shifting their possessions. Posters were made of thin paper and were easily damaged in the rainy season. As the sticker was not covered with plastic lamination the rain and wind could easily destroy the paper. Many women said that most of the houses in the slums were made with tin and bamboo fence which was also not suitable to keep the poster hung.

***Conflict with delivered BCC materials or messages***

Most of the respondents stated that in the Muslim religion, poster with human picture is not allowed in the prayer room. With this explanation, they expressed, '*namaz*' or prayer would not be accepted by Allah if they preserve posters with human pictures in their prayer room.

A woman said, *'I could not keep poster with human image in my room because my prayer might not be accepted by Allah, it is forbidden in my religion to keep any picture in the prayer room.'* (FGD# 03 with WSG)

Another woman said, *'my mother-in-law is a very pious person. She used to pray five times in a day and she put restriction on keeping this poster in the room. She also put restriction on keeping or putting any kind of picture on the wall.'*

***Influence of BCC message on practice***

About one-half of the participants mentioned that changes had occurred in seeking care regarding delivery, neonatal and children's complications among the community people.

One male from IDI participants mentioned, *"previously delivery was mostly depended on elderly female members of the family e.g., mother, mother-in-law, or other elders. However, after the exposure to the BCC materials now, I know the things to do; I will not depend on others. I will take my wife to the hospital if necessary."* (ID-42, male, age 20, Edu-6)

Regarding the poster of 'child danger signs' a number of women mentioned that they were not aware of neonatal and child complications e.g., navel infection, weakness, etc. but through the exposure to the poster they became aware of them. Now they would take their baby to the hospital immediately if any complication arises.

One male respondent said, *"In the past people believed that they could expel an evil spirit or cure a disease by means of exorcism (Jhar-fuk) and use leaves and branches of trees for treatment. However, at present, most people seek treatment at least from the pharmacy or take to the patient to a doctor even if they have liquid stool or fever. "* (ID-48, male, age 34, Edu-14)

In addition, a few women mentioned that they changed the previously common practice of putting oil on the navel to avoid the navel infection. Their awareness of neonatal and childhood pneumonia and its prevention increased.

One woman mentioned, *"It raised the awareness compared to the past, now we know that if my baby developed any sickness or problem then we will not sit at home. We will take our child to the hospital as quickly as we can. My knowledge and awareness has increased through this poster of Manoshi."* (ID-67, female, age 24, Edu-0)

Among all the posters, 'diarrhea management' poster was found most popular and acceptable among the study women. A few participants believed that some changes occurred in their practices. One woman from an FGD said that, *"In the past, our mother, or elders in the family did not allow us to have many kinds of food during diarrhea and they even did not provide any supplementary food to the baby during diarrhea. At present, we feed babies supplementary food during diarrhea and for that they are not getting sick."* (FGD-4, WSG, female, age 34, Edu-14)

### *Community recommendations on the posters*

- Pictures shown in posters should be realistic (like poster-1)
- Images of danger signs of children should be more clear (poster-2 &3)
- Text of diarrhea poster and leaflet should be larger (poster-4)
- Amount of ORS and tablets/medicine needed to be taken should be mentioned (poster-4)
- Picture of chest in-drawing should be made understandable (poster-2&3)
- Picture of the exposed breast (e.g., child's inability to suck breast milk) should be removed (poster-2)
- Include messages on prevention of diseases in the danger signs of child poster

## Community feedback on sticker (1-2)

### *Primary impression on stickers*

Almost one-half of participants were exposed to these two BCC materials and they recognized both images and messages well. According to a few informants, it was very useful to have these with them so that they can inform BRAC health workers immediately if any danger sign developed with their babies. However, many respondents could not understand the picture showing convulsion and prolonged labor in the sticker depicting danger signs of pregnancy. According to them, the real condition of women is not reflected properly by the pictures showing the convulsion and prolonged labor.

### *Preserving the stickers*

Sticker-1: Only one-third of all exposed participants expressed willingness to keep the sticker at their home as an emergency contact with BRAC health worker. One-

half of them kept the sticker during their pregnancy however they did not keep this after the delivery period.

Sticker-2: One-half of the exposed respondents kept this sticker so that they could use it as an emergency contact during their children's complication.

A few barriers were mentioned to keeping stickers with them at their home. A few of them stated that they could not preserve or hang the sticker due to fear of the house owner as mentioned above in the case of hanging posters.

In addition, some women felt embarrassed to keep sticker 1 at home. One woman stated that she was unable to hang that sticker due to her little children. She said, *"I cannot hang the sticker on the wall because my little child is so naughty, he just tears the sticker from the wall. I have to preserve the sticker under mattress of my bed. I am preserving the poster because if the health worker apa asked me to show the sticker again then I could show that quickly. "* (ID# 63, female, education-0). Another woman said, *'Look at the sticker, there were some images showing bleeding from woman, baby's hand came out from the birth place, etc., Such stickers could not be kept or hung on the wall. Many people in different age and relation come to visit my home. My husband and mother-in- law do not like to see such kind of picture in-front of other people'*.

***Conflict with delivered BCC materials or messages***

Similar issues and concerns were raised regarding stickers as had been expressed for posters. Displaying the stickers could hamper prayer at home. However, comparatively younger participants expressed a slightly different view on preservation of the sticker. A few of them stated in the past older generations had the belief that there should not be any picture at home, especially showing a human figure. However, today people seem more comfortable that pictures with human figure could be kept at home, except in a particular prayer room or place. One man said, *"Muslim people do not want to keep these stickers sticking on the wall because it is not allowed to keep such kind of sticker on the wall and pray to Allah in the same room."* (FGD# 5, village doctor)

Apart from religious point of view, we also found some cultural barriers to using BCC materials in the community. Some people could feel shy after seeing some pictures on the sticker especially showing bleeding and delivery complications, etc. They also did not want to expose those pictures in front of children or

elderly people. Some respondents mentioned that disclosure of pregnancy related information or complications (as displayed in the sticker e.g., open breast feeding, unclothed body of a baby, bleeding of a pregnant women, baby's hand caming out from the birth place) is very shameful to them. Some women agreed and said, *"Our culture does not permit us to see such kind of picture in front of others. Even though we know everything, we would not see such pictures in-front of older and younger people. We would like to keep this matter hidden from other people. Husband does not like to keep such picture at home because this is shameful in societal and behavioral context and especially in front of other relatives like elder brother-in-law."* (FGD-1, Village Doctor, *Kamrangir Char*)

Moreover, some women mentioned their strong belief that if a pregnant woman sees such a poster or sticker depicting sickness and ill baby she may deliver a sick baby or her healthy baby would become sick.

***Influence of BCC message on practice***

Majority of informants mentioned that changes occurred in their care seeking behavior. In case of any complications they received care from the local pharmacy, doctors, or from hospitals. Most of the informants mentioned that recently they became more conscious about maternal and child health compared to the past. One man said, *"Now people are not sitting at home with a disease like they did in the past or even they do not go for expelling an evil spirit or curing a disease by means of exorcism (jhar-fuk)'. Almost all people go to a doctor or a pharmacy or to the hospital. In this regard people changed their mentality."* (IDI #43, male, age-40 Yrs, Edu-07).

***Community recommendations on the stickers***

- All danger signs were not clearly reflected by the symbolic pictures

- Mothers expressed their dissatisfaction about some of the images including one showing hand prolapse. They were shy to keep the sticker at home and suggested to remove it. (sticker-1)

- Instead of a sticker, a calendar like material with multiple pages would be more suitable for keeping at home. They suggested that if there were multiple pages with images of danger signs along with a cover-page it would be easier for them to hang the material. Use of a cover page will allow them to hide embarrassing images. (sticker-1)

- The image of chest in-drawing should be made understandable (sticker-2)

- The woman feeding the baby with exposed breast should be removed or breast should be covered with cloth. (sticker-2)

**Community feedback on Folk song and Street drama**

***Folk song***

One-fourth of study participants were exposed to the folksong and the majority who were exposed could recognize its purpose.

Women reported a number of messages included in the folk songs such as proper food intake, taking rest during pregnancy, danger signs of newborn, restriction on shaving newborn's hair before one month, avoiding early marriage and pregnancy, exclusive breastfeeding, and importance of Vitamin-A and iodine.

Few participants believed that people who were listening to the folksongs repeatedly could remember these messages while people would forget if they listened just once in a while. One-third of the participants said that the knowledge from the folksongs would help them to provide suggestions or advice to other people.

***Street Drama***

One-fifth of participants were exposed to street drama. Exposed participants were unable to recall the actual messages delivered during the drama. Reported barriers included less attractive message delivery for the participant and inappropriate timing of conducting the street dramas to reach the target audiences.

***Community recommendations on folk song and drama***

Study participants recommended that folksong and street drama should be arranged two times in each month and separate sessions should be organized for male and female participants.

## *Community feedback on mass media (TV spot)*

One-fourth of the study participants were exposed to this TV spot broadcast. Females were more exposed than male participants. More than two-thirds could recall the actual messages of this approach. Most of the participants expressed that the TV spot helped them to be aware of the services of BRAC delivery center as well as danger signs of pregnancy. One of the respondents from FGD mentioned,

*"I heard about pregnancy, delivery and hemorrhage during pregnancy from the dish channel (cable TV). We need to take our pregnant women and child to BRAC delivery centre for their betterment."* (FGD-4, WSG meeting, *Kamrangir Char*)

***Community recommendations on TV spot***

Most of the study participants recommended that TV spot should be shown during the evening time.

## FINDINGS FROM DIFFERENT BCC EVENT OBSERVATION

### Folk song and street drama

- Team performance and audience response were very impressive. Both the events were focused on pregnancy related complications and husband's role to his pregnant wife.
- Event locations were not previously scheduled and physical environment of those locations were not always conducive. Location selection especially next to a mosque and in muddy areas hampered the occasion.
- Information on nutritional foods for pregnant women was not mentioned during the events. Although few of *Manoshi* health workers were present during the events they were not introduced by the performers.
- Length of performance (20/25 minutes) was very short in the context of interested audience.
- Front rows were mostly occupied by children which affected the target women getting the messages properly.

### Group meetings (EDD meeting, Women Support Group Meeting, Spouse Forum meeting, and MNCH meeting)

- Almost all the scheduled meetings did not start on time. In some cases, the facilitator did not arrive on time.

- Meeting rooms were too small for the number of participants.
- Surrounding environment was not congenial. Most of the meetings were held in noisy places and sometimes the rooms were swampy, dirty, and dark.
- Facilitators had very little control over the proceedings of the meeting.
- Lack of mutual understanding among facilitators was noted when there was more than one facilitator. Presence of children with mothers created disturbances during the meeting.
- Sometimes facilitator used very formal language which seemed incomprehensible to the participants.
- No record keeping process was found to address the participant's questions.

## DISCUSSION

This cross-sectional study was conducted in urban slums of Dhaka City where BRAC implements a BCC intervention as one part of its larger *Manoshi* project that provides MNCH services. All of the 360 study participants of the quantitative component of the study were women who had been living in the slum and delivered their baby in the last 12 months prior to data collection. The quantitative component assessed the level of knowledge and MNCH practices and explored the association between BCC intervention and knowledge. The qualitative component documented BCC events and explored acceptability of different BCC approaches.

The study found about 63% respondents having an education level of class five which is even higher than the national rate of 53.5% [19]. Only 11% of women were involved in income generating activities. About 50% of the families had monthly income of 7,300 Taka (roughly US$ 100). The average household size (persons per household) was 4.8, which is a little more than 4.4, which is the national average [20].

The study found a striking number (59%) of marriages occurring before 18 years of age though the legal age of marriage in Bangladesh is 18 years. This high rate of early marriage is concerning from a maternal and child health aspect and is likely

to contribute to a number of teenage pregnancies. The Urban Health Survey (UHS-2006) reports that about 46% of childbearing women are 15-19 years old in slum areas of Bangladesh.

Ninety-eight percent of women were aware of the need for antenatal care but only 18% correctly mentioned that at least 3 ANC check-ups are required during pregnancy. Data from the Bangladesh Demographic and Health Survey-2007 [10] reports 72% of the women who did not receive ANC were unaware of the need for ANC check-ups during pregnancy. In this study, women living in urban slums were more aware about the need for antenatal care in the study areas. Antenatal care practice was better than knowledge level. About 95% of women received any ANC compared to 66% of UHS-2006 report during their last pregnancy and 74% received 4 or more ANC check-ups compared to 22% of UHS-2006 report.

Knowledge about danger signs during pregnancy was better among the study participants. They mentioned severe headache (58%), prolapse (52%), high fever (50%), convulsion (48%), severe bleeding (47%); edema (32%) and prolonged labor (32%), which were the common messages delivered in the BCC interventions to build the awareness in the community. These messages are very important to protect mothers from death as hemorrhage (31%), eclampsia (20%), and prolonged or obstructed labor (7%) are the main direct causes of maternal death in Bangladesh [19].

In terms of knowledge level, more than 50% of women who participated in this study mentioned eating more foods and taking additional rest as being essential for pregnant women. Regarding place of delivery and skilled assistance during delivery, the results were more encouraging than the national statistics. Twenty-five percent of women mentioned home as the desired place where a woman should have her delivery; 75% women were interested in having their delivery at a facility. This study shows 43% of deliveries were conducted at home which is lower than the national rate (77%) of community-based deliveries from the BMMS-2010 [21] survey and the UHS-2006 reported home delivery in urban slums of 88%.

These findings show 18% of unmet need for facility delivery exists in the slum areas. Skilled assistance during delivery was 41% in the study area, more than two times higher than the rate of 19% reported by UHS-2006 in urban slums. Recent data from the BMMS-2010 shows that deliveries attended by a trained provider is 26.5% nationally but this study results suggest better performance in the selected

slum areas. In terms of postnatal care, 74% of study participants received at least one postnatal care visit from any provider. This is more than four times higher than the 18% reported in the UHS-2006 report and more than three times higher than a baseline survey report (24%) conducted by icddr,b in 2007 in similar slum areas. Nationally, 48% of women received postnatal care in urban areas [21].

Similar to maternal care, newborn and child care practices are better than the level of knowledge reported. For example, in selected variables for essential newborn care, knowledge and practice level differed as follows: drying (55% and 67%), wrapping (38% and 60%), and feeding colostrums to the neonate (53% and 87%). In spite of having some encouraging results in practices for bathing and shaving of neonate, the recommended practice was not adequate in the study areas. Knowledge on newborn's complications was fever (72%), breathing difficulty (55%), and jaundice (36%). About 75% mentioned colostrums as newborn's first feeding while 21% mentioned honey. About 78% had knowledge about the need for initiation of breast feeding just after birth and 87% mentioned six months for exclusive breast feeding while in practice only 39% of children were exclusively breastfed. The rate of initiation of breastfeeding within one hour of birth was 48% in the study area which is two times that of the 24% reported for urban slums in the UHS-2006 report. However, the above mentioned rate of exclusive breast feeding is just slightly higher than the 32% of UHS report in slum condition and somewhat lower than national level of 43% [10]. Awareness regarding use of oral rehydration saline (ORS) during diarrhea was very impressive as over 90% mentioned about this management.

Similar to other studies [15], this study shows that knowledge and practice level is improved since the baseline study of 2007. The BCC intervention of *Manoshi* has been implemented since mid-2007 in the study area. Although it is very difficult to show the direct effect of BCC channels individually in terms of knowledge or practice outcome this study attempted to explore the association of individual BCC exposure and the knowledge outcome of the study participants. Significant association was found (Table 8) in between sources of information and MNCH knowledge score. A few sources were statistically significant especially TV advertisement, group counseling, leaflet, and sticker while face-to-face counseling, folksong, street plays, and posters were not statistically significant. The absence of a control area is a major limitation for this study but as a whole compared to baseline and other national level data improvement on maternal, neonatal and child health knowledge and practices were observed in the study area.

Community members considered all the BCC tools as being essential but they also had several suggestions on each of the BCC tools. Both the qualitative and quantitative surveys showed that women had much less exposure to leaflet, folk song, and street drama which might have been influenced by inappropriate timing and amalgamation by male-female participation in the folk song and drama events. A similar study in rural Bangladesh by a Rahman A *et.al* (2011) revealed a similar situation regarding the acceptability of BCC tools (22). They also found less exposure to folk song and drama as a result of improper timing and less frequent events organized in the community. Community people in that study also suggested that frequent watching of street drama and hearing of folk song could be useful for memorizing messages, a finding very similar to this study. Barriers to keeping posters or stickers of maternal danger signs were also found similar in this study. Women felt shame on displaying these openly at home and also clearly stated that pictures are not allowed in prayer rooms among Muslim community. In most cases, display of cell phone numbers in the poster or stickers attracted women to keep those at home to more easily avail services from BRAC health workers. These studies suggest similar results in both rural and urban settings of Bangladesh. However, a culturally accepted community based MNCH related BCC intervention can contribute to extensive behavioral modification and reduction in maternal, neonatal and child mortality. Along with continuum of necessary and quality care, BCC interventions can improve the community capacity for sustainable development and thus improve the MNCH situation of the country.

## CONCLUSION

Awareness regarding maternal complications increased among the study participants. Still 25% of women think that home is the place where a woman should have her delivery. Almost all (99%) the women had knowledge on requirement of antenatal care and 45% of them mentioned at least 4 or more ANC check-ups are needed for a pregnant woman. Women were found to be less aware of prolonged labor and absence of fetal movements among the danger signs of pregnancy. Women showed relatively higher knowledge regarding essential newborn care (e.g., wrapping, drying, etc.) but they mentioned less about cord care. Women in the study were found to be knowledgeable regarding colostrums feeding or exclusive feeding rather than spacing time for newborn's bathing and shaving.

Regarding signs of pneumonia women have shown better knowledge except on chest indrawing. More than ninety percent of women mentioned ORS to be essential for diarrhea management. In terms of receiving antenatal care, delivery care, and postnatal care women showed very encouraging findings. Seventy-four percent of women received postnatal care 4 or more times, 57% of delivery took place at safe places including BRAC delivery (16%) centre and hospitals. Although essential newborn care practice was found to be better, recommended practice for bathing and shaving hair of newborn was not sound. In terms of exposure to BCC tools, much less exposure was found for leaflet, folksong, and street drama. Analysis done to explore the association between exposure to BCC tools and knowledge level showed that TV spot and sticker were more likely to be associated with a 'good' maternal and neonatal health knowledge score and were highly significant. No significant association was found for face-to-face counseling, poster, folksong, and street drama and a good knowledge score.

Although study participants considered all BCC materials to be essential and they were even influenced in their care seeking practices by these BCC materials or messages but all the materials were not well accepted by them. Many respondents could not understand the picture showing convulsion and prolonged labor properly and some information found in diarrhea management poster was unclear. They seemed confused in what to do with children less than seven months and more than seven months. They also misunderstood about the need for vegetables or nutritional food managing the diarrheal patients. The illiterate mothers did not understand the pneumonia poster properly and were unable to recognize the type of illness the child is suffering from. One of the barriers found in keeping posters or stickers embedded with pictures in room where prayers are said. Most of women felt shame to keep or hang sticker showing danger signs of mother. Picture showing the child unable to breastfeed was odd looking or shameful to many of respondents. Some women were afraid to see the danger signs in children thinking that, seeing this poster would continuously affect their mind and make them nervous that their children might have been attacked with these problems. Exposure to folk song and street drama was found very low but many of the exposed respondents had complained against short length of these sessions and physical environment of the locations where it happened. Most of the women also demanded to organize folk song and street drama events more frequently and separately for male and female participants. Group meetings were not held on time and especially for the EDD meeting the place was too small to accommodate all the participants.

## IMPLICATIONS FOR THE *MANOSHI* PROGRAM

- Program should continue increasing awareness on facility delivery among the slum community.
- There should be more emphasis on proper newborn care practices especially when to bathe and shave hair.
- Program should re-consider the design and use of few BCC materials such as leaflet, folk song, and street drama.
- BCC intervention should continue along with other activities of the program.
- Actual BCC messages should be reflected by the images to avoid the wrong impression among the audience.
- Program can initiate placing live picture where possible in the poster or sticker as most of the respondents recommended this.
- Pictures of danger signs in children should be clearer and program can think of alternative way to show the women in obstructed labor.
- Program should address the cultural barriers mentioned by the community people and change the approaches accordingly. Due to migration and mobility among slum dwellers, BCC tools need to be laminated.
- Location of street drama and folksong should maintain a schedule and select suitable physical environment to ensure maximum participation from the target audiences. Length and frequency of folk song and street drama events can be increased and can be organized separately for male and female audience.
- Program should increase the frequency of group meeting sessions (especially EDD meeting) to accommodate all the targeted audience properly.
- Program should think about suitable timing for broadcasting TV advertisements
- After all programs community feedback should be considered regarding suitability of the BCC materials or messages.

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## ANNEX 1

Poster#1 (healthy mother and child)

## ANNEX 2

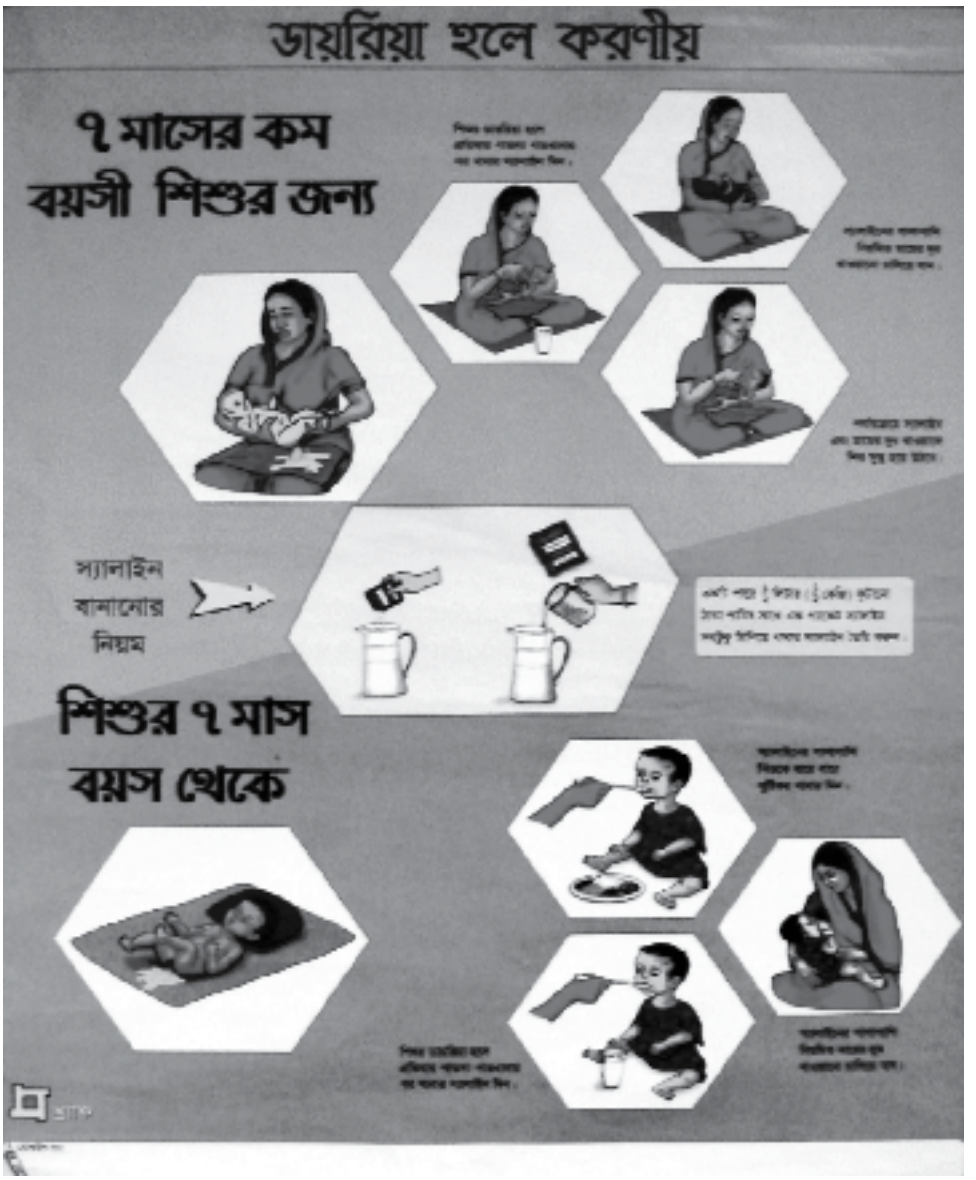
Poster#2 (danger signs of children)

## ANNEX 3

Poster#3 (signs of Pneumonia and remedies)

## ANNEX 4

Poster # 4 (Management of Diarrhoea)



## ANNEX 5

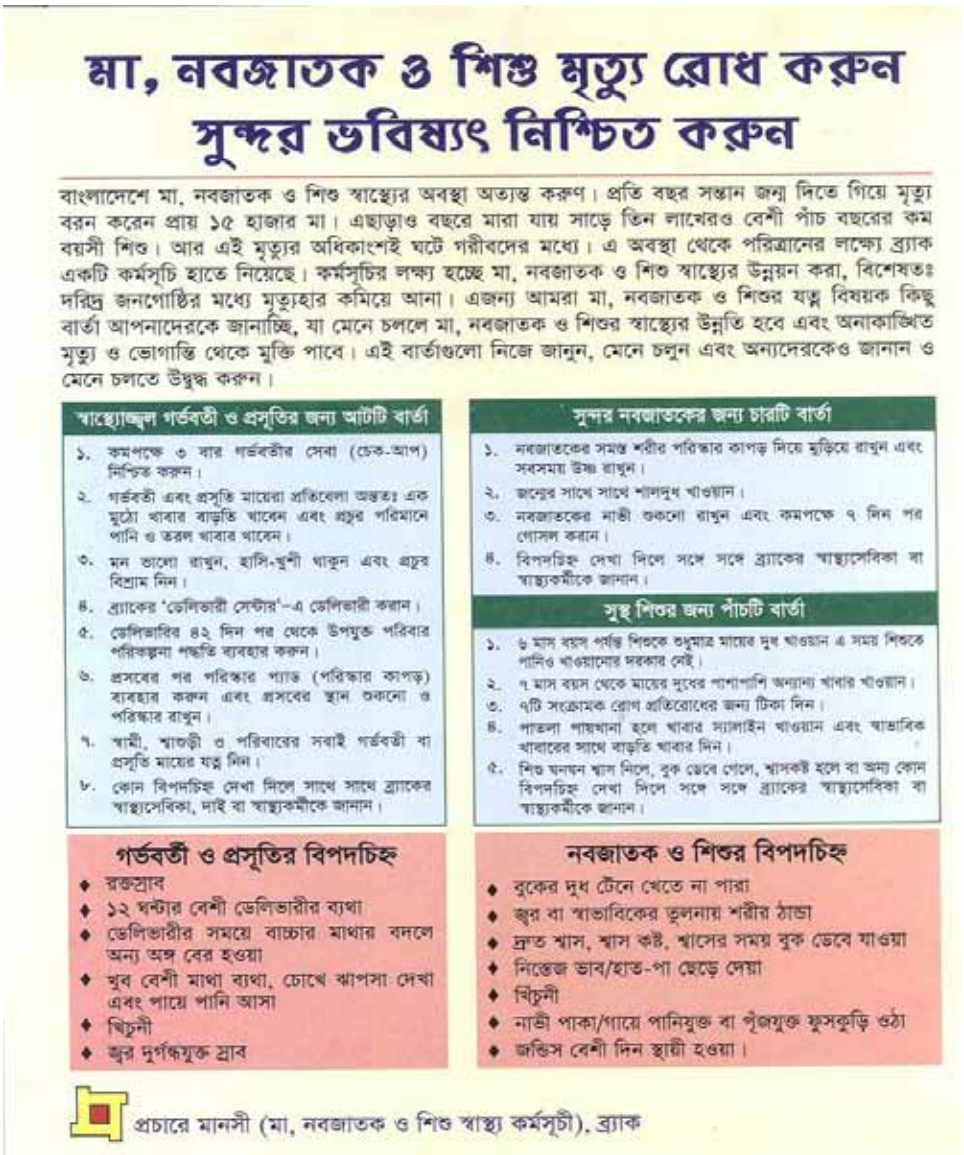
Sticker # 1
(five danger signs of pregnancy, delivery and post delivery period)

## ANNEX 6

Sticker # 2 (danger signs of children)

## ANNEX 7

Leaflet: (Heading: Prevent maternal, neonatal and child death, ensure vivid future.)



# মা, নবজাতক ও শিশু মৃত্যু রোধ করুন
# সুন্দর ভবিষ্যৎ নিশ্চিত করুন

বাংলাদেশে মা, নবজাতক ও শিশু স্বাস্থ্যের অবস্থা অত্যন্ত করুণ। প্রতি বছর সন্তান জন্ম দিতে গিয়ে মৃত্যু বরন করেন প্রায় ১৫ হাজার মা। এছাড়াও বছরে মারা যায় সাড়ে তিন লাখেরও বেশী পাঁচ বছরের কম বয়সী শিশু। আর এই মৃত্যুর অধিকাংশই ঘটে গরীবদের মধ্যে। এ অবস্থা থেকে পরিত্রানের লক্ষ্যে ব্র্যাক একটি কর্মসূচি হাতে নিয়েছে। কর্মসূচির লক্ষ্য হচ্ছে মা, নবজাতক ও শিশু স্বাস্থ্যের উন্নয়ন করা, বিশেষতঃ দরিদ্র জনগোষ্ঠির মধ্যে মৃত্যুহার কমিয়ে আনা। এজন্য আমরা মা, নবজাতক ও শিশুর যত্ন বিষয়ক কিছু বার্তা আপনাদেরকে জানাচ্ছি, যা মেনে চললে মা, নবজাতক ও শিশুর স্বাস্থ্যের উন্নতি হবে এবং অনাকাঙ্খিত মৃত্যু ও ভোগান্তি থেকে মুক্তি পাবে। এই বার্তাগুলো নিজে জানুন, মেনে চলুন এবং অন্যদেরকেও জানান ও মেনে চলতে উদ্বুদ্ধ করুন।

### স্বাস্থ্যোজ্জ্বল গর্ভবতী ও প্রসূতির জন্য আটটি বার্তা

১. কমপক্ষে ৩ বার গর্ভবতীর সেবা (চেক-আপ) নিশ্চিত করুন।
২. গর্ভবতী এবং প্রসূতি মায়েরা প্রতিবেলা অন্ততঃ এক মুঠো খাবার বাড়তি খাবেন এবং প্রচুর পরিমাণে পানি ও তরল খাবার খাবেন।
৩. মন ভালো রাখুন, হাসি-খুশী থাকুন এবং প্রচুর বিশ্রাম নিন।
৪. ব্র্যাকের 'ডেলিভারী সেন্টার'-এ ডেলিভারী করান।
৫. ডেলিভারির ৪২ দিন পর থেকে উপযুক্ত পরিবার পরিকল্পনা পদ্ধতি ব্যবহার করুন।
৬. প্রসবের পর পরিষ্কার প্যাড (পরিষ্কার কাপড়) ব্যবহার করুন এবং প্রসবের স্থান শুকনো ও পরিষ্কার রাখুন।
৭. স্বামী, শ্বাশুড়ী ও পরিবারের সবাই গর্ভবতী বা প্রসূতি মায়ের যত্ন নিন।
৮. কোন বিপদচিহ্ন দেখা দিলে সাথে সাথে ব্র্যাকের স্বাস্থ্যসেবিকা, দাই বা স্বাস্থ্যকর্মীকে জানান।

### সুন্দর নবজাতকের জন্য চারটি বার্তা

১. নবজাতকের সমস্ত শরীর পরিষ্কার কাপড় দিয়ে মুড়িয়ে রাখুন এবং সবসময় উষ্ণ রাখুন।
২. জন্মের সাথে সাথে শালদুধ খাওয়ান।
৩. নবজাতকের নাভী শুকনো রাখুন এবং কমপক্ষে ৭ দিন পর গোসল করান।
৪. বিপদচিহ্ন দেখা দিলে সঙ্গে সঙ্গে ব্র্যাকের স্বাস্থ্যসেবিকা বা স্বাস্থ্যকর্মীকে জানান।

### সুস্থ শিশুর জন্য পাঁচটি বার্তা

১. ৬ মাস বয়স পর্যন্ত শিশুকে শুধুমাত্র মায়ের দুধ খাওয়ান এ সময় শিশুকে পানিও খাওয়ানোর দরকার নেই।
২. ৭ মাস বয়স থেকে মায়ের দুধের পাশাপাশি অন্যান্য খাবার খাওয়ান।
৩. ৭টি সংক্রামক রোগ প্রতিরোধের জন্য টিকা দিন।
৪. পাতলা পায়খানা হলে খাবার স্যালাইন খাওয়ান এবং স্বাভাবিক খাবারের সাথে বাড়তি খাবার দিন।
৫. শিশু ঘনঘন শ্বাস নিলে, বুক ডেবে গেলে, শ্বাসকষ্ট হলে বা অন্য কোন বিপদচিহ্ন দেখা দিলে সঙ্গে সঙ্গে ব্র্যাকের স্বাস্থ্যসেবিকা বা স্বাস্থ্যকর্মীকে জানান।

### গর্ভবতী ও প্রসূতির বিপদচিহ্ন

- রক্তস্রাব
- ১২ ঘন্টার বেশী ডেলিভারীর ব্যথা
- ডেলিভারীর সময়ে বাচ্চার মাথার বদলে অন্য অঙ্গ বের হওয়া
- খুব বেশী মাথা ব্যথা, চোখে ঝাপসা দেখা এবং পায়ে পানি আসা
- খিচুনী
- জ্বর দুর্গন্ধযুক্ত স্রাব

### নবজাতক ও শিশুর বিপদচিহ্ন

- বুকের দুধ টেনে খেতে না পারা
- জ্বর বা স্বাভাবিকের তুলনায় শরীর ঠান্ডা
- দ্রুত শ্বাস, শ্বাস কষ্ট, শ্বাসের সময় বুক ডেবে যাওয়া
- নিস্তেজ ভাব/হাত-পা ছেড়ে দেয়া
- খিচুনী
- নাভী পাকা/গায়ে পানিযুক্ত বা পূঁজযুক্ত ফুসকুড়ি ওঠা
- জন্ডিস বেশী দিন স্থায়ী হওয়া।

প্রচারে মানসী (মা, নবজাতক ও শিশু স্বাস্থ্য কর্মসূচী), ব্র্যাক