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Factors Influencing Utilization of Manoshi Delivery Centres in Urban Slums of Dhaka

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ABSTRACT

BRAC introduced Manoshi – a community-based maternal, neonatal and child health initiative in urban slums of Bangladesh in 2007. Community delivery centres were established to provide appropriate management of delivery and essential newborn care along with referral facilities. A population and facility-based exploratory qualitative study, conducted during November 2007 to January 2008, aimed to identify factors affecting the use of delivery centres. Data were collected through in-depth interviews, focus group discussions, exit interviews, informal discussion with different service providers and non-participant observations. Findings suggest that slum residents preferred delivery centres because of free service, delivery attended by trained birth attendants, and management of complications through referral linkages. Preference of home delivery and essential newborn care were identified as an important factor that hindered the use of delivery centres though delivery at the centres was safer than the delivery at home. Other reasons for not using the delivery centres were preference for family birth attendants, facing no problem at home, and objection from mothers-in-law. The delivery-centre related factors, namely, absence of medical doctors, non availability of drugs and injections and fear for surgery were also found to be factors resisting use of delivery centres. Provision for salary or other incentives for health providers, quality performance, training of health providers on effective management of complications and good client-provider interaction may influence better use of delivery centres and play a significant role to continue Manoshi in urban slums without BRAC support.

INTRODUCTION

Three-quarters of maternal deaths result from direct obstetric complications, namely hemorrhage, sepsis, obstructed labour, hypertensive disorders of pregnancy and septic abortion (1). The technical means to prevent the overwhelming majority of maternal deaths from these causes have been known for many decades. What is lacking, in many areas of the world, is the ability to bring necessary technical skills - economic, geographic, and operational - to the women in need of help (2). In much of the developing world, barriers to healthcare are so great that many women do not benefit at all from the healthcare system. Studies of maternal mortality in developing countries have shown that making pregnancy and childbirth safer means ensuring that women have access to a continuum of care, including appropriate management of pregnancy, delivery and postpartum care together with access to life-saving obstetric care while complications arise (3-5). Access to such care is a crucial component of the Safe Motherhood initiative. Aiming to ensure skilled obstetric care, eighteen developing countries from Africa, South America and Asia have successfully developed waiting homes or birthing huts close to the community as an alternative to decentralize essential obstetric services (2). Maternity waiting homes are residential facilities located near a qualified medical facility where high-risk mothers can await their delivery and be transferred to a nearby medical facility shortly before delivery, or earlier should complications arise (2).

Following experiences of other developing countries, in Bangladesh, World Mission Prayer League of LAMB Hospital adopted the waiting home concept beginning in the nineties. A small facility was established in Dinajpur LAMB Hospital where mothers who have been identified as high-risk at one of their antenatal clinics can come and wait for delivery. Women who are at high-risk (having pre-eclampsia, mal-presentation, poor obstetric history, etc.) are encouraged to come to the waiting facility 2-4 weeks before their due date depending on their condition and home situation (2). Encouraged by its experience and in response to the Millennium Development Goals (MGD) of the country (6), BRAC, a leading non-governmental organization (NGO), began a health programme in 1990s with a view to improve women's health through early identification of high-risk pregnancies and ensuring management of all these cases.

In addition, BRAC established community maternity centers, named delivery center, within urban slums which are usually neglected, lack adequate maternal and neonatal health services, and are subjects to housing characteristics that limit privacy. Delivery centre is the key component of Urban Maternal Neonatal and Child Health (MNCH) programme launched by BRAC in 2007.

Thirty-two delivery centres provide services to nearly 650 slums in Dhaka city. The key services offered are clean delivery by trained urban birth attendant (UBA) with the assistance of *Shasthya Shebikas* (SS). Two UBAs provide 24 hours service at one

delivery center. UBAs provide immediate mother care and help to refer. SSs provide essential newborn care and immediate management of newborn complications at delivery centers. In addition, *Shasthya karmis* (SK), community midwives (CMW) and referral programme organizers (RPO) remain responsible to attend emergencies and referral to the appropriate levels of essential obstetric and neonatal care.

Evidences reveal that although, two-thirds of the women were identified as high-risk pregnancies, majority gave birth without any complications (7). On the other hand, women who were not diagnosed as high-risk, turned into life-threatening cases (8). This led to questioning the validity of the high-risk approach and shifted strategies from 'high-risk' to 'every pregnancy at risk'. To overcome this situation initially delivery centres were asked to encourage all pregnant women to come in closer access to the facilities before the expected date of delivery. Most of the women refused to come to the delivery centres for personal and other reasons (7).

Research on physical facilities, services offered, community acceptance and demand, and providers' perception affirmed that delivery centres, with some upgrading, are capable for ensuring safe delivery at slum settings (3, 4). Thus, utilization and factors affecting the use of delivery centres needs to be documented. This study examines among others what services are offered, how the delivery centres are managed, and what factors are influencing the use of delivery centres. These are the issues examined in the present document.

Objectives

i) To find out the practices of safe delivery[1] at delivery centres by trained birth attendant.

ii) To assess the management of essential newborn care after delivery by *Shasthya Shebikas* (SS).

iii) To identify factors influencing the use of delivery centres.

iv) To elicit the opinion regarding Manoshi project's continuation in urban slums after withdrawal of BRAC support.

[1] For safe delivery, WHO (1996) emphasizes 'five cleans' during the delivery: a clean place and a clean surface, clean hands, and cord cutting (clean cords and dressing, and a clean tie).

METHODS AND MATERIAL

Study design

The present study is a population- and facility-based exploratory qualitative study in which data were collected from November 2007 through January 2008.

Study area

The study was carried out in three delivery centres located in two Dhaka city slums where BRAC initiated Manoshi project in 2007. Manoshi had implemented 32 delivery centres covering 636 slums in different areas of Dhaka City Corporation, including Gulshan, Shyampur, Shabujbagh, Kamrangir Char, Uttara and Mohammadpur. In these areas, all the three core programmes (micro finance, health and education) of BRAC were undertaken where sense of trust and rapport had already been established in the slums.

Older delivery centres were selected purposively from Boubazar (Gulshan), Jamaibazar (Gulshan), and Mominbagh (Kamrangirchar).

Catchments areas of selected delivery centers covered a total number of 26,498 households with 110,258 people.

Main occupation of the male members of the selected slum dwellers was found to be day labour, and rickshaw puller; whereas women were mainly garment workers and maid servants.

Study population

The study population was healthcare providers working at the delivery centres including urban birth attendants (UBA), *Shasthya Shebikas* (SS), *Shasthya Karmis* (SK), community midwives and (CMW), and programme organizers (PO); and married women of reproductive age (15-49 years) who were currently pregnant; and postnatal mothers (42 days after delivery) who delivered child at delivery centers and who delivered child at home. The study also included secondary target population, such as, husbands, neighbours, urban elite, non-BRAC birth attendants, Manoshi committee members, owners of birthing huts, and BRAC health staff who were likely to have influence on the use and sustainability of the delivery centre in urban slums. Different groups were interviewed to get information about the factors enhancing the use of delivery centres.

Sample size

We used purposive sampling technique. Informal discussions were held with community people to find the appropriate persons for indepth interview. Thirty-three percent healthcare providers, 40% post-natal mothers (42 days after delivery) and 27% secondary population were selected among a total number of 92 respondents (Table 1).

Data collection procedure

We mainly adopted qualitative methods consisted of observation of delivery centres to assess the practice of safe delivery, essential newborn care and factors affecting use of delivery center. Observation was also followed by in-depth interview.

In-depth interviews were conducted with UBAs, SSs, SKs, CMWs, and POs from each delivery center to elicit their views and perceptions of healthcare providers and the reasons for using and not using delivery center. Focus group discussions (FGD) were conducted with currently pregnant women and post-natal mothers (42 days after delivery) who delivered child at home. Exit interviews were conducted with post-natal mothers who delivered child at delivery centers.

Informal discussions were also carried out with the secondary target population (e.g. husbands, neighbours, urban elite, untrained birth attendants, Manoshi committee members (committee consisted of slum elites, such as teachers and religious leaders), mother support groups (group members consisted of slum women who had acceptability by community women), and owners of delivery centres to get their views about the use of the delivery centers including reasons for use and non-use and project continuation. One anthropologist and a sociologist were assigned for data collection.

Table 1. Data collection methods and respondents

Methods	Study area and number of respondents			Total
	Boubazar	Jamaibazar	Mominbagh	
In-depth interview				
UBA	2	2	2	6
PO	1	1	1	3
CMW	-	1	1	2
SK	1	1	1	3
SS	5	5	5	5
3 FGDs				
Post-natal mother	6	6	6	18
Exit interview				
Post-natal mother	8	6	5	19
Informal discussion	1	1	1	3
Owner of delivery center	1	1	1	3
Untrained birth attendant	3	3	3	9
MANOSHI Committee member	4	4	3	11
Mother support group member				
	32	31	29	92
Observation	3	2	1	6

Research tools

A checklist was used for data collection. Separate checklists were used to perform observations, in-depth interviews, FGDs and informal discussion with different categories of respondents. Checklist for in-depth interview was pre-tested. Based on pre-testing, the tools were revised before final data collection.

Analysis

The qualitative data were coded line by line, and then categories and themes were identified. The data were analyzed thematically (9). One anthropologist and one sociologist were assigned for collecting, analysis and transcribing the data.

Quality control

Quality of data was checked by three-layered monitoring system. The data were cross checked by the supervisor. Researchers from head office monitored data collection by field visits at regular intervals. Additional assessment of new theme and reviews across interviews for inconsistency was checked and thoroughly scrutinized.

RESULTS

Safe delivery practice at delivery centre

Since UBAs were the key persons to conduct delivery at the delivery centres, two alternatively UBAs provide round the clock service in one delivery centre. Warm welcome and encouragements successfully eliminated all the worries of pregnant women. Regarding this issue a mother mentioned, "*It was my first pregnancy and I was afraid. She (UBA) encouraged me adequately and ensured that in case of complications, BRAC helps by appropriate referral."*

In order to ensure safe delivery, BRAC encouraged using delivery kits consisting of soap for hand washing, a surgical blade for cord cutting, thread for cord tying, gauze to clean the newborn's mouth, eyes, ear, and nose and a plastic sheet for using on the surface. Observations found that all the UBAs at the delivery centres used delivery kit. They washed their hands with soap, maintained regular trimming of their nails; tied hair tightly and wore clean dress. Cord was cut with the surgical blade as the placenta ejected. For tying the cord, few UBAs boiled thread. They tied the first knot two fingers from the navel. Second knot was tied one finger apart from the first knot and then third knot was tied at three fingers apart from the second knot. The umbilical cord was then cut in the middle of second and third knots. Finally, the mother was properly cleaned and was assisted to wear cloth and pad. UBAs maintained the cleanliness of the delivery centers. They were also responsible for sufficient water supply and for cleaning the surface.

The findings showed that UBAs' practices regarding delivery were better in delivery centres than to home delivery. However, some wrong practices were still prevailing, indicating varying range of gaps in knowledge. Table 2 shows the findings of the observations regarding delivery.

Table 2. UBAs' performance for safe delivery

	Observed at delivery centre	Exit interview	Home delivery
Hand wash with soap	6	8	4
Use of gloves	1	0	0
Use of clean plastic (Use of clean plastic sheet and surface is considered arrangement of clean place)	6	17	4
Clean place	6	17	4
Surgical/new blade	6	17	10
Boiled thread	3	7	1
n	6	18	15

Note: Multiple responses were considered.

Though the UBAs used delivery kits, in some cases knowledge gaps influenced proper use of delivery kit and the safe delivery practice as well. UBAs did not know the proper answers regarding the reasons and appropriate techniques to use delivery kits. As an example, it can be mentioned that number of boiling blades was higher than that of threads (Table 3).

Table 3. Knowledge of UBAs regarding use of delivery kits

	UBA	Ideal answer	
Delivery kits are safe and germ free	6	Yes	
Use of soap is for washing hand	6	Yes	
Use of soap is for cleaning mother	2		No
Use of soap is for cleaning newborn	2		No
Gauze is for cleaning newborn's mouth, eyes, ears and nose	6	Yes	
Gauze is for cleaning mother before feeding colostrums	2		No
Blade needs to be boiled before use	6		No
Thread does not need to be boiled before use	3	Yes	
n	6	4	4

Note: Multiple responses were considered.

In-depth interviews explored the reason for such practice. It was found that UBAs perceived boiling blades to be more important than the boiling thread. An UBA mentioned, *"I do not boil thread because it is new but I always boil blade before cutting cord. Blade is made of steel and, therefore, it may cause tetanus if not properly boiled."*

Observation time for emergencies after delivery

In order to find out the waiting time after delivery in the centres, the time interval between entry and exit was calculated and the interval ranged 6-9 hours (Table 4). Post-partum mothers should be kept in delivery centres up to 12 hours after delivery for emergency observation. However, during observation, it was found that women did not want to stay long in the center because of their responsibilities to household works. A mother mentioned, *"My husband and my five years old child were at home. My husband is a day labourer. His daily income will be lost if he stays at home. So, I have to return home soon for preparing food and caring my elder child."*

Table 4. Waiting time of observed deliveries at delivery centers

Time	Delivery-1 (Boubazar)	Delivery-2 (Boubazar)	Delivery-3 (Boubazar)	Delivery-4 (Jamaibazar)	Delivery-5 (Jamaibazar)	Delivery-6 (kamragirchar)
Enter	3 am	10 am	6 am	10 am	12pm	9.15 am
Exit	11 pm	4.30 pm	12 am	4.30 pm	7pm	5 pm
Waiting	8 hours	6½ hours	6 hour	6½ hours	8 hours	9 hours 15minutes
Waiting time after delivery on average: 6-9 hours						

Essential newborn care at delivery centers

SSs are trained up to provide essential newborn care at the delivery centres. Their training included, wiping, wrapping, and maintaining body temperature as well as resuscitation procedures. In majority of the cases, SSs accompanied the mothers to the delivery centres and provided newborn care. At first, they checked the breathing of the newborns whether it was proper or not. They cleaned up newborn's mouth, eyes, and ear with gauze which were available inside the delivery kits. After that newborn skin was cleaned tenderly and the baby was wrapped from head to feet with old clean soft clothes before the baby was brought by an attendant. Then the baby was placed in the mother's lap for feeding colostrums. It was found that all the newborns at delivery centres were fed with colostrums within one hour after delivery, which was found to be earlier than the home-based newborn management. In delivery centres newborns were not given any bath. On the other hand, in case of home delivery, in most of the cases the newborns were given bath before breastfeeding though bathing was forbidden up to three days of delivery. Community people perceived newborns as impure before bathing. Therefore, in case of home delivery, new born bathing practice is still prevalent (Table 5). Findings of the present study also show that management of newborn care was better at delivery centres than at home.

Table 5. Practice regarding essential newborn care

	Observed at delivery center	Exit interview	Delivery at home
Wipe with clean soft cloth	6	8	11
Clean mouth, nose, ear, eyes	6	12	4
Wrap body with clean cloth	6	15	11
Bathing right after birth	-	-	5
Initiation of breastfeeding within one hour	4	17	8
Birth weight within 24 hour	6	12	10
Essential newborn care by SS	6	10	-
Essential newborn care by neighbours or relatives	-	8	15
N	6	18	15

Note: Multiple responses were considered.

Factors influencing the use of delivery centre

Slum residents preferred delivery centres because of free services and deliveries attended by trained birth attendants. One of the Manoshi committee members and a mother who delivered her baby in one of the centres mentioned, "*Delivery centres are situated near the community. Therefore, community people do not need to move far away to seek care. Local birth attendants are not always available at home but in delivery centres urban birth attendants (UBA) are available 24 hours. They provide free services. So, guardians are tension free.*" Besides, this, management of complications through referral linkages, cleanliness, SS and SK motivations were recognized as influencing factors to use delivery centers. A woman who used the delivery centres mentioned, "*My husband and mother in-law prefer delivery centre because of its provision for free service. In my case UBA and PO helped a lot in*

referral during complication. My husband says delivery centre may help in reducing maternal death."

The delivery centres could attract mothers in many ways. Table 6 shows reasons for using delivery centres.

Table 6. Factors influencing use of delivery centres

	Manoshi committee members	Mother support group	Owner of delivery centres
Free services	8	7	2
Near the community	9	6	2
Delivery conducted by UBA	9	8	1
Delivery centre helps to refer patient	9	9	3
SK and SS convinced pregnant women	7	8	3
Delivery centre is clean	8	6	1
Raising of awareness	6	6	2
N	9	9	3

Note: Multiple responses were considered

Reasons for not using delivery centres

Women who preferred home delivery were asked the reasons for not using the services of delivery center, and along with the respondents the SSs were also asked for exploring the reason. The SSs were selected for the purpose because they were much close to the community women and they provided door to door services and provided information regarding delivery centers. The responses received from them can be summarized into two principal categories. One is related with personal and family factors and the other was related with delivery centres (Table 7).

Table 7. Reasons for not using delivery centers

	Shasthya Shebikas	Mother
Delivery centre related factors	10	10
• No provision of medicine/injection/saline	8	11
• No doctor at delivery centre	6	6
• Fear of referral to hospital	7	7
• Fear of surgery	4	6
• Do not know about delivery centre		
Patient related factors	7	7
• Delivery at parent's home in village	6	-
• Inhibition by mother in-law / mother	4	6
• Do not face any problem at home	-	4
• Preferred for family *Dai*/neighbour/relative	3	6
• Labor pain started at night and did not get time as delivery happened quickly		
n	15	10

Note: Multiple responses were considered

Regarding the causes for not using the delivery centres the frequency of answers from the SSs and mothers are identical (Table 8). The service-related problems of the delivery centres include no provision for medicine/injection/saline, no doctor at delivery centre, fear of referral to hospital, fear of surgery and ignorance regarding delivery center care. The patient-related factors include delivery at parent's home in village, inhibition by mothers-in-law/mothers (only on the basis of information obtained from SSs), no problem at home preferred for family *Dai*/neighbour/relative (only on the basis of information obtained from mothers), initiation of labour pain at night and, therefore, did not get time as delivery happened quickly.

We also explored why community people preferred *Dai* (birth attendants), neighbour and relative instead of trained birth attendant. Women who had experienced previously a normal home delivery without any complication did not prefer delivery centers. The family where *Purdah* was practiced woman was forbidden by mother and mother in-law to seek care from delivery centre. A mother commented on not using delivery centres as she thought, "*Home delivery is easy, convenient and I experienced previous delivery at home without any hassle. I do not like to go anywhere to deliver child. This is against purdah."*

Community people have both positive and negative attitudes regarding delivery centres. A mother support group member mentioned, "*Slum residents perceived both positive and negative attitudes regarding delivery centre. One mother came to me and expressed in details how much helpful the delivery centre was but one of my neighbours prefers home delivery. She perceived delivery centre as place of surgery and there is no doctor. She was also afraid regarding surgery without being attended by a doctor."*

Opinion regarding project's continuation without BRAC support

Respondents were asked how project would continue after phasing out of BRAC's programme and what role would they play. They opined that slum people would not be able to organize manpower to run such activities systematically. So, it would be difficult to continue project without help of BRAC. The slum dwellers also commented that the job could not be done sincerely without monetary support and training. After phasing out of BRAC programme, provision of these technical and financial matters such as training, job, and salary will not be viable. However, some stated that personal commitments of the staff, training and other technical supports and quality behaviour may play important role. A committee member mentioned, "*If we are committed to perform our job as before will help to continue project without the help of BRAC."*

The respondents were also requested to provide their opinion regarding the introduction of the user charge in delivery centres. All of them disagreed regarding introduction of service charge since it would be difficult for poor slum people to bear. Exception was found in only one case. A manager of Manoshi project commented, "*Service charge should be introduced among comparatively rich residents. Collected money will be used to provide services to the poor after phasing out of the BRAC programme."*

DISCUSSION

The health services in urban slums are worse than that of non-slum urban areas. It is estimated that about 80% deliveries in slums are conducted by neighbours or relatives at home (10). Antenatal coverage is 55% in a slum which is much lower than in non-slums74%. Immunization coverage is 63% in urban slums and 73% nationally in non-slums (10). To improve such situation BRAC established doorstep service delivery by community health workers and established community delivery center, thorough Manoshi Project (11, 12).

The primary objective of the delivery centers was to provide safe delivery services in slum areas. As it is already known that the aim can be achieved through proper use of maternal and neonatal care intervention (7, 13).

Safe delivery services provide protection of life and health of both mother and child (14). For safe delivery, The World Health Organization emphasizes on five cleans during the delivery: clean place, clean surface, clean hands, clean cord cutting and clean tying (15). Besides, safe delivery is associated with elements like birth preparedness, complication readiness, use of skilled provider at delivery and knowledge of danger signs (16, 17). This study findings show these scenarios. However, trained urban birth attendants at delivery centers still have same knowledge gaps in using the delivery kits.

The infant mortality rate is 66.7 per 1,000 live births, and the neonatal mortality rate is 42 per 1,000 live births in Bangladesh (11). This scenario can be changed by providing proper essential newborn care (18, 19). Essential newborn care not only saves lives, but also reduces serious complications that may have long-term effect (20, 21). The study found that management of newborn care was better at delivery centre than in home delivery. So, the slum residents still perform traditional practices. They are guided by traditional beliefs and perceptions of newborn care practices.

The study found that the delivery centres were attractive to the slum residents. Residents preferred delivery centres because of its free services and for its referral linkages. On the other hand, some people did not rely on the delivery centres because the centres did not provide medical support.

The respondents perceived that arrangements in vaccination and full time services by a medical doctor may increase the use rates of delivery centres. Besides, if providers behaved cordially and informed mothers and husbands about what kind of services were provided by the centres would motivate them to use the delivery centres. For the slum residents good performance of health providers can influence use of delivery centres and play significant role to decrease the maternal and neonatal mortality.

RECOMMENDATIONS AND POLICY IMPLICATIONS

Considering community demand and the key findings, the programme should consider the following issues:

1. Observations may influence the practice of UBAs at delivery centre. Therefore, the program should perform close monitoring.
2. Evidence shows that in Manoshi intervention areas, traditional malpractice is still continuing regarding maternal and essential newborn care. Therefore, Manoshi should find out the strategy to reduce such practice. Manoshi should focus on creating awareness regarding newborn bathing, as well as initiation of breastfeeding through EDD (expected delivery date) meeting.
3. Existing health services should be improved by giving priority to the community demand. A paramedic may be involved in emergency service delivery.
4. Knowledge level of the study population and health providers is still inadequate. To raise their knowledge level a proper programmatic action is required.
5. To ensure the quality of services supportive supervision is needed. That should include concise documentation of the woman's medical and treatment history. If a woman leaves the slum or if someone comes, this record will help to know the use rate of delivery centres.
6. A strong network should be developed between family members and health providers. For example, UBAs should be introduced with all family members, not only the mothers, but also with the mothers-in-law and husbands.

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