



Manoshi

December 2009

Issue 3

Bangladesh is a country of 56,977 square miles with 150 million people, 25% of whom currently live in urban slums. Despite success in population control, the size of the population is expected to stabilize at 250 million by 2085. One of the very striking features of the future population of the country is that nearly 60% of the population will live in urban slums by 2030. In the absence of appropriate health services, the health of the newborn, infants and their mothers is likely to suffer. This makes urban health issues, especially of the slum dwellers, of high priority. Keeping this in mind BRAC has started a Maternal, Newborn and Child Health (MNCH) programme, known as Manoshi (*Ma O Nobajatak Shishu*), in 2007 in Dhaka slums which may gradually be extended to all the slums of Bangladesh by 2011. The major goals of Manoshi are to ensure safe motherhood by way of safe delivery and newborn and child care. Various researches are being carried out in support of Manoshi since its inception. Manoshi Research Briefs are a fast track mechanism devoted to sharing the findings to various stakeholders interested in the health of the urban population especially of the poor.

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Causes of Death in Dhaka Slums



Boys playing in a slum area in Dhaka

Maternal, neonatal and child mortality remain a major concern in Bangladesh, especially in urban slums. Health indicators are worse for the urban poor than the rural poor. Newborn and under-5 mortality rates are higher compared to national levels. According to the Urban Health Survey carried out in 2006, the neonatal mortality and under-5 mortality rates were 43.7 per 1000 live births and 80.7 per 1000 live births respectively. This study done for Manoshi, identifies medical causes of maternal, neonatal, and child deaths among slum dwellers and investigates non-medical causes of death among slum dwellers in the Manoshi programme.

This study aimed to identify all adult female (aged 15 to 49 years), newborn (aged 0-28 days), infant (29 days to 11 months), and child deaths (12 months to 59 months) in the Manoshi programme areas of Uttara, Gulshan (Korail and Shat Tola), and Kam-

rangir Char from January to December 2008. Between January 2008 and December 2008, a total of 287 deaths were identified. Out of them, 121 were from Kamrangir Char and 83 each from the other two areas. There were 116 deaths



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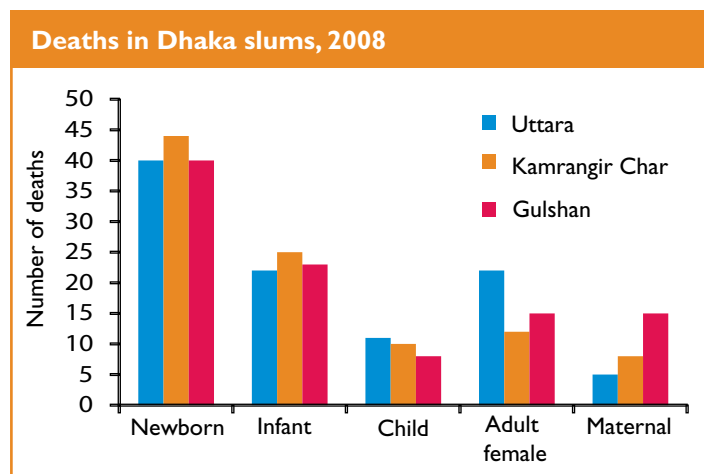
Environmental conditions in a slum area in Dhaka

during the childhood period (1 to 4 years), 48 among women aged 15 to 49 years due to non-maternal causes, and 25 due to maternal causes.

Quantitative and qualitative methods were used in the form of structured interviews conducted with family members of deceased women, newborns and children, to assign medical causes of death. To determine the socio-cultural factors related to the deaths, in-depth semi-structured interviews were conducted.

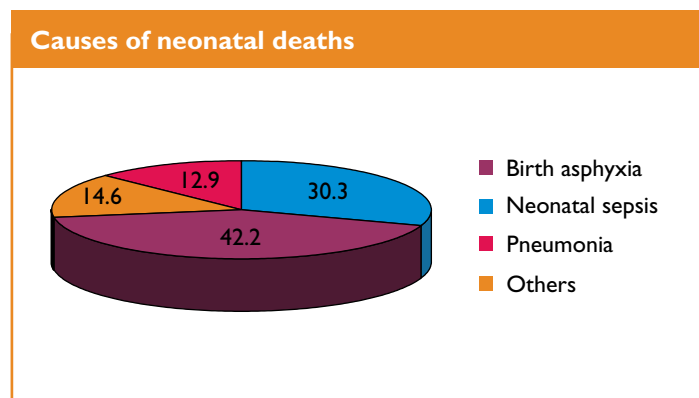
Deaths in different slum areas

The majority of deaths were among neonates, followed by infants and adult females. The highest number of neonatal, infant and child deaths were found in Kamrangir Char. In Uttara, there were more adult female deaths but fewer maternal and infant deaths, whereas in Gulshan, there were more maternal deaths, but fewer child and adult female deaths.

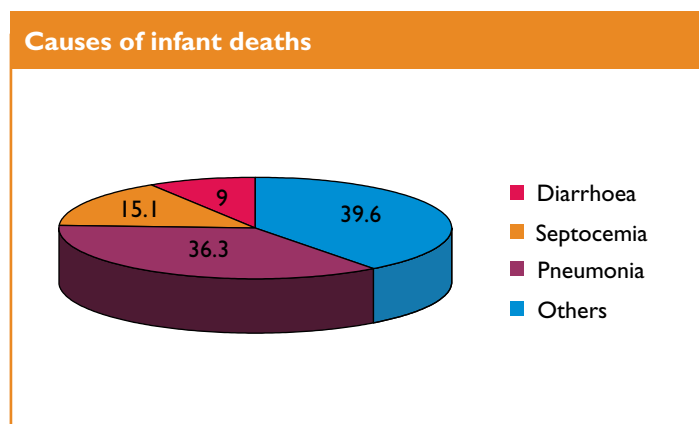


Medical causes of death

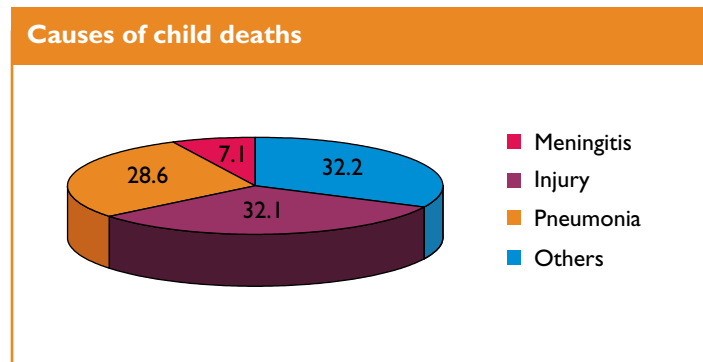
The most prevalent direct causes of death for newborns were birth asphyxia (42.2%), sepsis (14.6%), and pneumonia (12.9%).



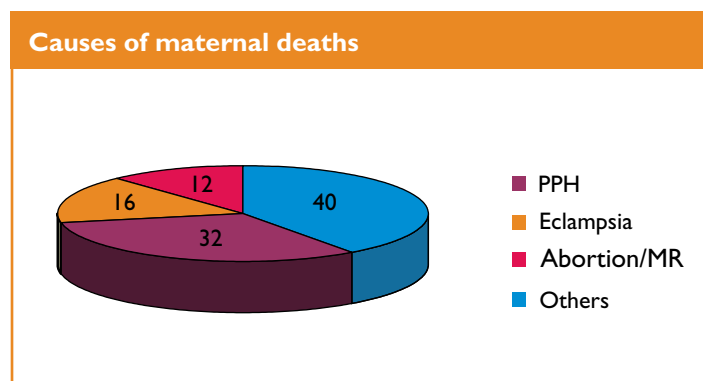
The most common direct causes of infant deaths were pneumonia (36.3%), sepsis (15.1%), and diarrhoea (9.0%).



The most common direct causes of death among children involved drowning, scalding and burning, and transport accidents (32.1%), pneumonia (28.6%), and meningitis (7.1%).



Of the 25 maternal deaths, the direct causes identified were postpartum haemorrhage (32.0%), eclampsia (16%), and complications of abortion/MR (12.0%).



Influences of socio-cultural factors

Based on several case studies, socio-cultural factors linked to the deaths have been determined through in-depth semi-structured interviews. The interviews included a more in-depth understanding of care-seeking behaviours, barriers and facilitators to seeking timely care, and decision-making related to healthcare.

Case 1

Maternal death due to postpartum haemorrhage in Kamrangir Char slum

35 year old Julie, a housewife, lived with her husband and her three children. All her previous pregnancies were normal and did not involve complications. She delivered her fourth child at home with the assistance of a traditional birth attendant (TBA). When Julie's water broke in the afternoon, she was not experiencing strong labour pains. The TBA suggested a medicine seller who subsequently gave her saline and other medicines to increase the labour

pains. A few minutes later, the baby was born, and the medicine seller left. Since the placenta was not delivered, the TBA tried to remove it. There was a lot of bleeding, and two hours after delivery, the placenta still had not been removed. The family called the medicine seller to come back but he refused. The family then requested another TBA who was able to remove the placenta after more than three hours had passed following the delivery of the baby. At that time, the bleeding had decreased. However, eventually the woman stopped breathing. The family took her to a hospital by a rickshaw van where the doctor declared her dead. The delay in seeking care led to the woman's death because the family and the TBAs were unable to recognize the extent of bleeding. There are several things that could have been done to decrease this delay.

Factors leading to death:

- Family and TBAs did not realise the extent of bleeding.
- The TBA's method of removing the placenta may have been harmful.
- Belief that medicine seller can manage postpartum haemorrhage.

How to improve the Manoshi programme:

- TBAs should be taught to recognise postpartum haemorrhage.
- TBA practices of removing the placenta should be examined and corrected.
- Counselling by Shastya Shebika and Shastya Kormi to promote deliveries in birthing huts is needed.
- Timely transportation to higher level facilities should be facilitated .

Case 2

Neonatal death due to low birth weight in Uttara slum

Sobuj and Nurjahan lived in Uttara slum. During Nurjahan's second pregnancy, she did not seek antenatal care and had not received any visits from BRAC health workers. Her husband heard about the BRAC delivery centre from his neighbours, and when her labour pain began during her seventh month of pregnancy, he brought her to the delivery centre. Nurjahan had a normal delivery with the help of an urban birth attendant (UBA). The baby was small, weighing only 900 grams, and had difficulty breathing. As a result, they were referred to Dhaka Medical College Hospital (DMCH), but they could not go there

until the next morning due to difficulties in arranging transport. There were no beds available at the DMCH, and the Manoshi programme officer then referred them to the Azimpur maternity clinic. The newborn was immediately put in an incubator and was given medication and oxygen. Despite all that, the baby died within 24 hours of birth, in about 10 to 12 hours after being admitted to Azimpur clinic. There are several things that could have been done to decrease these delays.

Factors leading to death:

- The family recognized the problem, but delayed care seeking.
- Difficulty in arranging transport to DMCH at night.
- Cause of prematurity was perceived to be the wife not seeking antenatal care.

How to improve the Manoshi programme:

- Delivery centre staff could facilitate transport arrangements, especially at night.
- Increase women's awareness of the Manoshi programme.
- Improve identification of pregnant women and ensure that Shastya Kormis visit them for ANC.
- Messages on causes of prematurity should be disseminated.

Case 3

Maternal death due to postpartum haemorrhage in Kamrangir Char slum

Nazma (34 years old) lived with her husband and three children. During the eighth month of her fourth pregnancy, she was admitted to Mitford Hospital for abdominal pain. After a while, she was discharged because the neonatal incubators were not working. She was then admitted to a private clinic in Dhaka. Over there, she received an injection to lessen her pain as well as saline. In addition, she had an X-ray, blood test, and an ultrasonogram done. The doctors then diagnosed that the baby was underweight and suggested injections. After three days, Nazma was feeling better and was therefore discharged. However, after 17 days, she began to feel the pain again. This time since she could not afford to go to a private clinic, she went to Dhaka Medical College Hospital instead. The doctors failed to find any complications with her pregnancy, and decided to plan a caesarean section within 7 days. The caesarean section ended up being delayed for a week and it was done on her 14th day at the hospital. She was given one bag of blood, and both the mother and the baby were then doing fine. Later that evening, Nazma started bleeding, and the doctors needed to do another caesarean section to remove the placenta. This time she required 10 more bags of blood and she had to rely on an external oxygen system. Given her critical situation, the second caesarean section could not be performed and she died the next morning. In this case, her



Interview with a mother in a Dhaka slum

death can be attributed to neglect by Dhaka Medical College Hospital. There are several factors that could be improved.

Factors leading to death:

- Poor quality of care at Dhaka Medical College Hospital.
- Lack of manpower and delay in date of caesarean section.
- The doctors performing the caesarean section were inexperienced and were unable to successfully remove the placenta during the first operation.

How to improve the Manoshi programme:

- Manoshi programme officer can advocate for patients at the Dhaka Medical College Hospital.

Case 4

Neonatal death due to pneumonia and low birth weight in Korail slum

A woman from Korail slum, pregnant with her second child, received antenatal care visits from Manoshi health workers. During the eighth month of her pregnancy, she experienced convulsions. As a result, she was referred to Dhaka Medical College Hospital through Manoshi staff. She was

brought to the hospital immediately, and the baby was born the next morning. It was a normal delivery, but the baby was underweight at only 1300 grams. The baby had trouble drinking breast milk. A special cotton jacket was provided by Manoshi to keep the baby warm.

Around twenty days after birth, the baby developed respiratory problems. Due to the jacket, the family had difficulty identifying these breathing difficulties, and did not recognize the symptoms until it was very serious. The family then notified the BRAC delivery centre who referred them to the Urban Primary Health Care Centre at Mohakhali where they were given medicine. Within one hour of returning home, the family contacted the BRAC delivery centre and asked for a referral to Dhaka Medical College Hospital. BRAC staff instead referred them to the Notun Bazar Maa O Shishu Clinic. The father visited this clinic immediately, and the baby was given additional medicine but could not be admitted due to financial constraints. The family consulted with the BRAC managers who suggested continuing the medications. The baby ended up receiving injections for 9 days, and then died. This case reflects that this family went to many places and spent a significant amount of money to try and save the baby. Manoshi staff should have been able to recognise the baby's breathing difficulties. Lack of awareness and knowledge arising from both the family and Manoshi staff led to this unfortunate incident.



Living conditions in a Dhaka slum

Factors leading to death:

- Family could not recognize that the baby had trouble breathing.
- Manoshi staff could not recognize that the baby had trouble breathing.
- Manoshi staff were informed immediately but gave conflicting information as to where to go, and did not facilitate or help with financial support at Shishu hospital.
- Difficulty in getting care from facilities due to the poverty of the family.

How to improve the Manoshi programme:

- Manoshi messages should explain how to check breathing, especially among low birth weight babies.
- Manoshi staff should be better trained and selected so that they are able to recognise breathing difficulties in neonates.

Other case studies cited the following socio-cultural factors related to deaths:

- Poor families with no financial support find home deliveries to be the only viable option.
- Lack of knowledge and awareness about the need to seek help from skilled providers.

- Traditional practices prevent or delay the decision to seek proper and more effective care.

Recommendations

- Identify pregnant women, continue and maintain follow-up of those who have moved within the slum.
- Disseminate messages about safe motherhood and harmful practices as well as highlight the dangers related to delays in seeking appropriate care.
- Provide further training and increase awareness of TBAs/UBAs about safe practices when removing the placenta.
- Promote the use of delivery mat that measures haemorrhages of up to 450 ml to signal an emergency, both for home deliveries and at BRAC delivery centres.
- Facilitate simple and convenient system of referrals by:
 - a) Increasing the number of public hospitals and beds in neonatology wards.
 - b) Equipping BRAC delivery centres with birth asphyxia management capacity.
 - c) Developing a system of transport to health facilities.
 - d) Providing financial support to poor families.

Prepared by Samira Choudhury. Source: Moran A, Iqbal M, Sultana M, Choudhury N, Khan N. Manoshi Operations Research: Causes of Death Study. Unpublished.

Oxytocin use during labour at home in a Dhaka slum



Collecting data from a slum dweller

Oxytocin is a commonly used obstetric drug to induce and/or augment labour, and to prevent and/or control postpartum hemorrhage. Although the World Health Organization currently recommends the use of Oxytocin (or similar drugs) during the third stage of labour to prevent postpartum haemorrhage in developing country contexts, during the intrapartum period Oxytocin should only be administered under conditions where close maternal and fetal monitoring by skilled providers and caesarean section are available. Serious adverse outcomes for both mother and child have been documented from Oxytocin use. There is evidence that the use of Oxytocin and similar drugs is not limited to the third stage of labour, and that it is widely used to augment labour during home deliveries by unregistered local allopathic practitioners and auxiliary nurse-midwives via intramuscular injections or saline infusions in South Asia. Preliminary findings from the Manoshi programme indicate that village doctors and traditional birth attendants work together to administer “injections” at the home to speed up the process of delivery. Given the adverse maternal and neonatal outcomes of inappropriate use of Oxytocin, there is an urgent need to explore its use by untrained providers during home deliveries.



A birthing facility

Shastya Kormis at work

UBA at a birthing facility

This study was implemented in Kamrangir Char slum, in Dhaka, Bangladesh where the Manoshi programme has been working since March of 2007. The study population included women with a recent delivery, traditional birth attendants (TBAs), and village doctors (VDs). A quantitative survey was done using a structured questionnaire that collected information on demographic variables, obstetric history, birth experience, use of medicines/treatments including Oxytocin, reported delivery and neonatal complications, and care-seeking behaviours as well as detailed information on the providers who attended the delivery. The respondents were married women aged 15 to 49 years with a delivery at home or with a trial of labour at home in the six months prior to the survey. A total of 463 women and 27 VDs were interviewed.

In the qualitative interviews, a triad from each of the seven segments of the slum – one woman, her traditional birth attendant, and the VD were included. While using the same inclusion and exclusion criteria, in the qualitative study, only women with a delivery within 3 months of the survey were made eligible to reduce recall bias. In-depth interviews were conducted to explore household and community norms around use of Oxytocin to speed up labour. Questions included the reasons for using Oxytocin, decision-making, timing, relationships between the family, TBA and VD, monitoring the mother and baby after Oxytocin use, and costs. A total of 21 in-depth interviews took place.

TBAs are female, not certified or licensed providers and usually learn their trade through hands-on training from relatives or neighbours. They have little or no education, perform deliveries as a service and not for money, and may or may not have received informal training on how to deliver.

VDs, who are usually male, almost always own a shop where they sell allopathic medicine. They also go on home visits to the community and advise on medicines available for purchase in their shops, although they have limited training, and have usually acquired their skills from relatives, friends, and sometimes from skilled doctors.

Findings

All 463 women interviewed for the quantitative survey had a trial of labour at home with 88% giving birth at home and 12% giving birth in a health facility. Almost all women were assisted by a traditional birth attendant at home. Of the 463 deliveries, there were 465 babies born. Ninety-nine percent of the deliveries resulted in a live birth, with four stillbirths. Of the 461 women with live births, 3.5% reported that their baby had trouble breathing at birth. On average, women agreed or strongly agreed with the statements that medicines shorten labour duration and facilitate delivery, that medicines to speed up labour can prevent hospital delivery, and that medicines to speed up labour reduce maternal suffering.

Of the 463 women interviewed, 46.3% reported using medicine to increase their labor pains to accelerate their delivery. Of these women, 28.3% reported using Oxytocin. Among women who reported using Oxytocin to speed up their delivery, all but one received Oxytocin from a VD.

The reasons for using Oxytocin were to:

- Increase labour pain (97.7%),
- Deliver the baby more hurriedly/easily (54.2%),
- Increase the birthing woman's energy (29.8%).

Women with any education were two times more likely to use Oxytocin, while women with two or more deliveries were almost 70% less likely to use Oxytocin. Women with knowledge of using saline/injections to increase labor were 9.5 times more likely to use Oxytocin, and those who reported a long labour were 2.4 times more likely to use the medicine. Positive attitudes about Oxytocin use were also significantly associated with Oxytocin use. In the family, the husband (45.8%) and woman's mother/father (16.8%) were the most commonly cited decision-makers concerning the use of Oxytocin, while TBAs and VDs were the decision-makers on the health provider side (91.6% and 44.3% respectively).

All women reported that the TBA did an examination before Oxytocin was administered. This check-up included checking cervical dilation (94.7%), the baby's distance from the cervix (65.6%) via internal vaginal examination, the position of the baby (65.6%) and fetal movement (41.2%). Ninety eight percent of the VDs who typically administer the Oxytocin were reported to have checked the woman's blood pressure. Only one woman reported that the VD checked the foetal heart beat. However, in general, in 88.5% of the cases, the VD relied on information from the TBA's examination before giving Oxytocin.

Almost all women received either one (84.0%) or two (13.7%) doses of Oxytocin, with three women reporting receiving three doses. Eighty-six percent of women reported receiving Oxytocin through saline infusions, while 20.6% reported receiving an intramuscular injection. The first dose of Oxytocin was given within 24 hours of labour pain for three-quarters of the women, with 45.8% reporting receiving a second dose less than one hour after the first

dose. For 50% of the women, the baby was born within 30 minutes of the last dose of Oxytocin. 14.5% of women who used Oxytocin were referred to a facility. Reasons for referral included prolonged/obstructed labor, eclampsia/convulsions, premature rupture of membranes, failed induction, and others. Of the four women with stillbirths, one woman had used Oxytocin during labor. Among the women with a live birth, 4.6% of women with a baby who had trouble breathing at birth used Oxytocin during labour compared with 3.0% of women who did not use Oxytocin.

Traditional birth attendants (TBAs) play a key role in facilitating use of Oxytocin, often acting as the broker between the family and the village doctor.



Outside a birthing hut in Shaheenbag slum

A case study

Jasmin is 35 years old and has been living in Kamrangir Char for 13 years. She has no education, and her husband works in a private business. This is her fifth child. Jasmin suffered from some labour pain for 7 days. On the eighth day, she felt pain in her hands and legs at 5 pm and the pain increased. She wanted to call her *dai*, but her *dai* was away. At 9 pm, she called another *dai*. The *dai* did oil massage, and checked the cervix but it was not dilated yet. She was also given spiritual water to increase her labour pain. At 10 pm, members of the household were getting worried that the baby was not born yet. They suggested bringing in the village doctor to give medicine to speed up the labor. The *dai* did not agree and was not involved in bringing the VD to the house. She thought that the baby's head was large and the birth canal was narrow. Her husband went to the VD who they usually saw regarding health problems. The VD mixed the medicine in his shop (unclear if 2 or 3 doses), and the VD's nephew went to Jasmin's house and started the saline drip at a fast rate (40/45 drops per minute). Before starting the saline, the nephew of the VD asked about Jasmin's condition and checked her blood pressure and the baby's position. Her aunt also gave

her some herbs to put on her thigh to ease the delivery. Jasmin had no pain, and after 30 minutes, the 500 ml bag of saline was finished. Her husband removed the saline drip. At 11pm, Jasmin started bleeding, and her whole body became cold. The family called the VD on his mobile phone, and he ensured them that the labour pain would start. The VD said he would go to the house to check on Jasmin in the morning. In the morning, the VD did not come. Jasmin's husband brought in a second VD based on the *dai's* suggestion. The second VD referred Jasmin at once to a health facility. Jasmin was admitted to Dhaka Medical College Hospital. Her family knew people there, so it did not take long to admit her. The doctor who examined her said that her uterus had ruptured, and at 3 o'clock that afternoon, a caesarean section was done. The baby was healthy, but Jasmin suffered a lot. She received six bags of blood and stayed in the hospital for 11 days. After she returned home, she had fever and convulsions. The total cost was Taka 25,000 for the caesarean section (blood, medicine, baby), in addition to Taka 500 for the VD. The *dai* did not charge anything for the delivery.

Why Oxytocin is given

There was a widespread belief among women and TBAs that babies cannot be born without pain. Therefore, if the pain was not strong enough, there was a need to bring the VD to give medicine to increase the intensity of pain. Use of spiritual treatments were also common. Women and TBAs both discussed the importance of drinking holy water at the onset of labour to increase pain. If this water does not work, then the VD is called to give Oxytocin.

The belief about the necessity of a painful delivery and the use of Oxytocin or medicines to speed up labour to facilitate delivery is strong; even poor women feel the necessity to pay for Oxytocin.

How the decision is made

As most deliveries in this urban slum were attended by a TBA, it is the TBA that decides if and when a VD is needed to administer Oxytocin. If the cervix is dilating, but the labour pain is not increasing rapidly enough, then the TBA calls a VD to the house. VDs are usually male, and therefore do not examine the woman directly. When they arrive at the house, they ask the TBA about cervical dilation, the distance of the baby from the cervix, and the baby's position. They also ask about the baby's movement, the expected date of delivery, the number of previous deliveries, and rupture of membranes. The TBA ascertains this information through repeated internal vaginal examinations. The VD checks blood pressure, odema, ultrasound reports (if available), and rarely foetal heart rate. Based on the VD check-up and the information from the TBA, the VD decides whether or not to give Oxytocin and if so, the amount to give. VDs and TBAs reported that cervical dilation and the distance of the baby's head to the cervix are critical in determining whether to give Oxytocin and in

what dosage. VDs and TBAs reported that women can be administered Oxytocin if the cervix is dilated between 1 to 4 finger widths (approximately 1 to 4 centimeters), and if the baby is 1.5 to 2 inches from the cervix (measured by finger length).

How Oxytocin is administered

When Oxytocin is given, it is almost always mixed with a saline infusion. VDs reported that they never give more than two doses, although some TBAs and some women reported three doses being given. Several VDs reported that it was contraindicated to give intramuscular Oxytocin injections as "only specialist doctors do this". However, women and TBAs did report intramuscular injections of Oxytocin if the baby's head is "stuck" in the cervix. After initiating the saline drip, the VD usually monitors the heart rate. If any problems occur, she calls the VD.

After the baby is born and the placenta is expelled, most respondents reported that the TBA removed the saline right away to avoid convulsions. Two TBAs reported mixed messages about the timing of the removal of the saline drip. Saline is perceived (by TBAs and family members) to give the women extra energy, which is often needed after a long labour and delivery. Many women and TBAs reported perineal tears after using Oxytocin. These tears are usually repaired by a facility-based provider at home. The VD prescribes medications for pain and/or antibiotics to cure these problems. In general, the TBA receives between Taka 150 and 500 and/or small gifts for attending the delivery. The VD charges between Taka 200 to 1000 (including medicine). Both VDs and TBAs reported charging poor families less for their services.

Both VDs and TBAs had limited knowledge about the harmful effects of Oxytocin use, especially in regard to the baby.

Knowledge of village doctors and TBAs

Of the seven VDs interviewed, six had received at least one training. However, only one VD received a training specific to labour and delivery. Most VDs learned about Oxytocin use from observing skilled doctors and other VDs. Only two of the seven TBAs received training. All TBAs learned about how to use Oxytocin from skilled providers, other TBAs, or VDs. The majority of TBAs and VDs are not aware of harmful effects of Oxytocin for the woman or her baby.

Relationship between TBAs and village doctors

TBAs and VDs have developed a close working relationship. A TBA usually works with only one VD and the VD usually only works with one TBA. This relationship has developed based on perceptions of the other's experience, expertise, reputation, and ability to understand each other. In most cases, TBAs do not receive any financial incentive from the VDs. However, they do receive free medicine from the VD for their families, and their reputation is improved for ensuring a speedy and safe delivery. The TBA is becoming a "broker" for VD services during delivery, and they often "compete" with each other for the most

experienced TBA in the community. In the past, family members used to approach the VD directly, but now they have to contact the VD through the TBA.

Conclusion

The use of Oxytocin among slum dwellers in Dhaka is governed overall by inadequate knowledge of when and why to use it and of the dangers it poses to both the pregnant woman and the foetus. The common practice of delivering at home under the care of a TBA brings with it all the risks associated with the level of competency and knowledge the TBA possesses. The role of the village doctor who supplies Oxytocin modifies this risk negligibly as his knowledge is typically no more, and his involvement in the birthing process even less. Notably, the interdependent relationship between TBAs and village doctors only serves to strengthen the role of TBAs in assisting births in the community. In order to bring a change in the use of Oxytocin and other risky practices in the urban slums of Bangladesh, not only does there need to be interventions to raise levels of knowledge of TBAs, VDs, and the lay population, the cultural beliefs regarding the role of women and the importance of pain during childbirth also need to be addressed.

Prepared by Rumesa Rowen Aziz. Source: Moran AC, Wahed T. Exploring the use of Oxytocin during labour at home setting in urban slums. Unpublished.



Children playing in a Dhaka slum

Willingness to pay for maternal, newborn and child healthcare in Dhaka city slums



Slum woman discussing her views on maternal services in the slum

The Manoshi programme is being expanded gradually to the urban slums of the six city corporations of Dhaka, Chittagong, Sylhet, Rajshahi, Barisal and Khulna and 15 metropolitan areas of Dhaka to provide services to 8 million people. Expansion or scaling up of the Manoshi programme brings to the forefront issues of sustainable financing mechanisms, mobilization of resources, increasing costs, funding gaps and efficiency in resource use. To explore the financial sustainability of a large scale community level intervention, a study was undertaken to examine the willingness to pay for birthing services in the slums of Dhaka city. The rationale used for introduction of fees in a programme that targets the poor is that it usually encourages a sense of ownership and increases compliance and contributes to cost sharing. The willingness to pay (WTP) survey, adopting the contingent valuation method (CVM)¹, was designed to provide evidence-based information to help make informed pricing decisions based on feedback from the targeted participants. Evidence from the survey indicates that the majority of respondents were willing to pay over Taka 400 for the services provided by Manoshi. A small proportion of respondents (4%) expressed their inability to pay the pre-assigned price. The WTP survey provides the opportunity to estimate the number of clients who would pay a given price, how much is reasonable to charge, and the characteristics of individuals who would pay and would not pay that price, and decide whether to proceed with a registration fee.

In the urban slums of Bangladesh, despite the close proximity to skilled care, maternal and child health conditions are unacceptably poor and often worse than the rural and non slum urban areas. In many developing countries, facility based obstetric care for all to reduce the high maternal mortality rate is simply not feasible with current resources and infrastructure. Thus, the need to strengthen or initiate effective community level interventions to improve maternal and child health outcomes, including mortality, is crucial. Manoshi, a community level initiative of BRAC, provides a combination of safe motherhood interventions promising improvement of the standard of out of facility care through training of the community health workers and birth attendants, provision of essential safe motherhood services, as well as timely access to facility based obstetric care when needed.

Details of the Study

A cross-sectional survey of 920 respondents from three purposively selected slums of Dhaka city, namely Kamrangir Char, Sabujbagh, and Korail slums, was carried out during March through September 2008. At the time of the survey several delivery centres had been operating in each of these slums for more than a year.

Respondents included were couples, i.e. married women of reproductive age (MWRA) and their husbands. Currently pregnant and non-pregnant women with under-5 children who were either using or had used the delivery centre services within six months of the survey were randomly selected from lists available from the delivery centres. All husbands were invited to participate. Newlywed couples were identified with the help of other respondents and slum residents. Those who did not want any more children or had adopted permanent contraception methods were excluded.

The questionnaire was extensively pre-tested in non-study slum areas. The questions related to WTP were pre-tested with lower to higher prices based on current spending information received from these respondents for similar services from alternative sources. Four prices were selected (Tk. 250, 300, 350, 400) based on maximum responses received.

In the actual survey, a clear description of the services provided by Manoshi was offered to the respondents followed by questions on how much the participants are willing to pay for the services. In each questionnaire, one of the prices from the above-mentioned four price options

¹ CVM is a widely used approach that estimates the value of a product or service by asking individuals their response to a carefully worded, hypothetical scenario presented to them. The valuation of a product or service is contingent on the hypothetical scenario that is described.



A man at work in a Dhaka slum

was randomly marked before the interview. Thus each respondent had only one price to consider but different individuals had different price options. To encourage accurate responses, the respondents were reminded of other available alternatives, that paying fees would limit their ability to spend money elsewhere, and it is acceptable not to want the service. As respondents may not be prepared to make a decision immediately, half of the respondents in each study site were given time to think (TTT) overnight or for a full day, to evaluate carefully the price they were willing to pay. The remaining respondents were not given time to think (no time to think—NTT).

Findings

Characteristics of Respondents

The majority of the MWRA were 15 to 24 years old and less than 15% of the women were older than 30 years, while, most of the husbands (46%) were over the age of 30 years. Approximately 15.4% of the sample was newly married. The majority of the women (85%) were housewives. Some women worked in the garment industry (6.5%), and a smaller proportion worked as maidservants, daily labourers and small traders. Of the housewives, more than 14% were earning members contributing to household expenses. Most husbands were employed in rickshaw-pulling, small trades, daily labour and petty jobs. More than one-third of respondents had no formal education. Among the three-fourths who had some formal education, women had higher levels of education and a higher proportion of women were literate than men.

Findings show that the mean and median monthly household income was Tk.¹ 6941 and Tk. 6000 respectively. Survey information gathered on income and possession of assets indicates that most of the respondents did not belong to the poorest of the poor; only 5% had a comparatively low income level with earnings less than Tk. 3000 per month.

Survey findings show that Manoshi delivery centres were preferred for antenatal checkups by the majority (59.7%), followed by government hospitals (16.4%), female private practitioners (7%), and NGO clinics (6.6%) involved in the Urban Primary Healthcare Programme (UPHCP).

It was evident that approximately half of the respondents (50.2%) preferred their homes for birthing purposes. However, a majority of the respondents mentioned Manoshi delivery centers as a preferred option, especially pregnant and non-pregnant women and their husbands. Most newlyweds preferred deliveries at home attended by a trained Traditional Birth Attendant (TTBA).

Healthcare behaviour prior to Manoshi

Survey findings show that approximately 83% of the deliveries had taken place at home assisted by untrained TBAs before the initiation of the program in the slums. Only 12.3% of the deliveries had been facility based, of which 11% took place at government hospitals and 1.3% in private clinics.

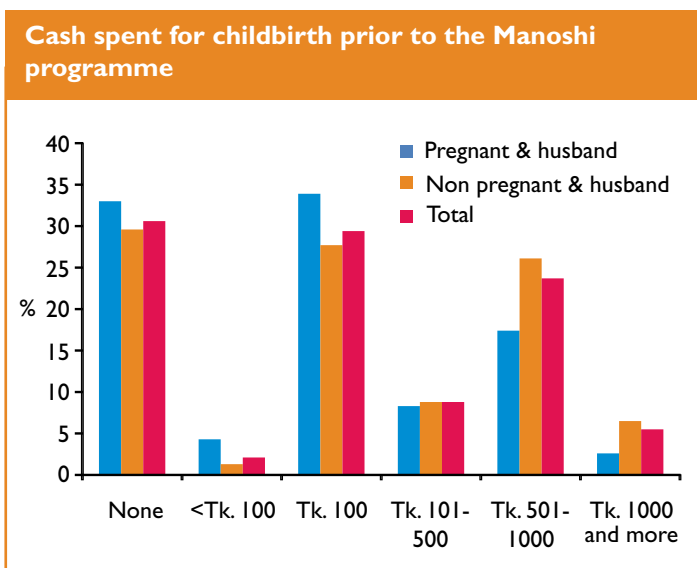
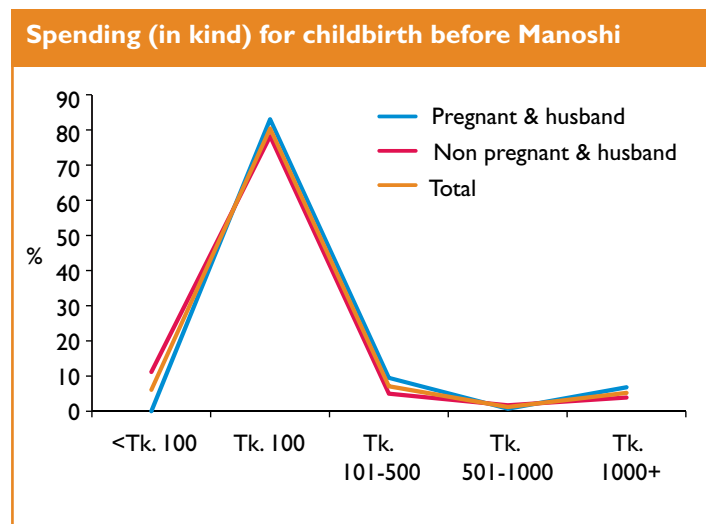
¹ Tk = Taka, Bangladeshi currency.

Traditionally, for a normal delivery attended by a *dai* two types of expenses are incurred:

1. A gift (normally a saree), and/or food and transport costs for the *dai* and
2. Equipment needed for the delivery such as a razor blade, soap, antiseptic, thread, and a pain killer.

It was observed in the study that prior to the Manoshi programme, a third of the respondents had not had to pay any cash for their most recent delivery. Expenditures incurred by 29.4% of the respondents were Tk.100, and 23.7% had spent Tk. 501 to 1000 for their most recent childbirth. Only 6% had spent more than Tk.1000 in cash during their last childbirth.

In the survey, most respondents (80.4%) had spent an amount equivalent to Tk. 100 in kind during their last childbirth. About 5% reported spending more than a Tk. 1000 in kind.



Willingness to pay

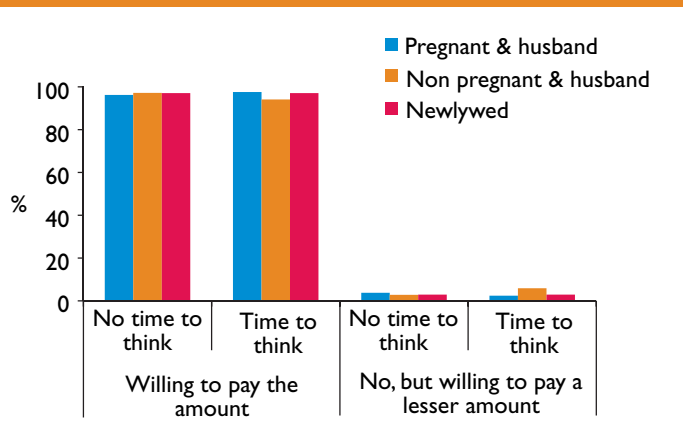
Findings revealed that, apart from 7 respondents, all other respondents were interested in using the Manoshi delivery centres. The respondents not interested in the programme were not asked questions on willingness to pay in the survey.

Almost all respondents who expressed interest in using delivery centres were willing to pay the pre-assigned price (or even more).

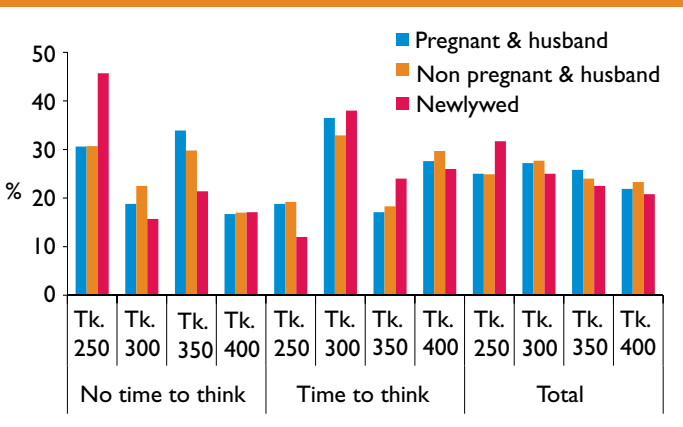


Monitoring the Manoshi programme

Willingness to pay for birthing services provided by Manoshi



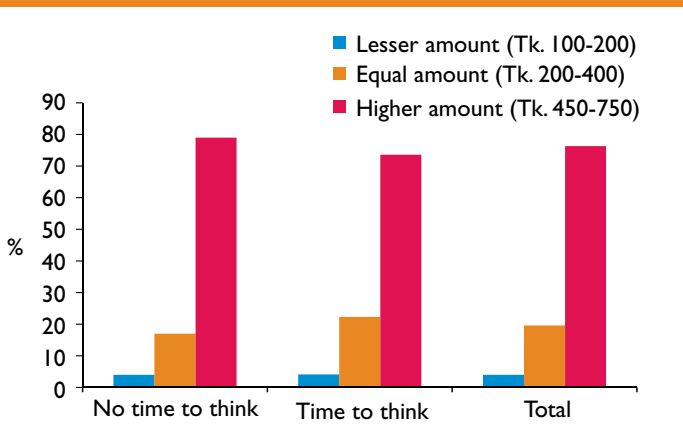
Willingness to pay for Manoshi services by types of respondents



However, a small proportion of respondents expressed their inability to pay the pre-assigned price, but said they were willing to pay a lesser amount. It may be mentioned here that the program should carefully consider appropriate waivers or safety net measures for the poorest of the poor if fees are introduced in the programme.

In the context of the pre-assigned prices, the most commonly accepted amount was Tk. 300 among the pregnant and non-pregnant MWRA and their husbands. However, approximately one third of newlyweds were willing to pay a lesser amount of Tk. 250. In all groups, more respondents given TTT were willing to pay Tk. 300 compared to those who had NTT.

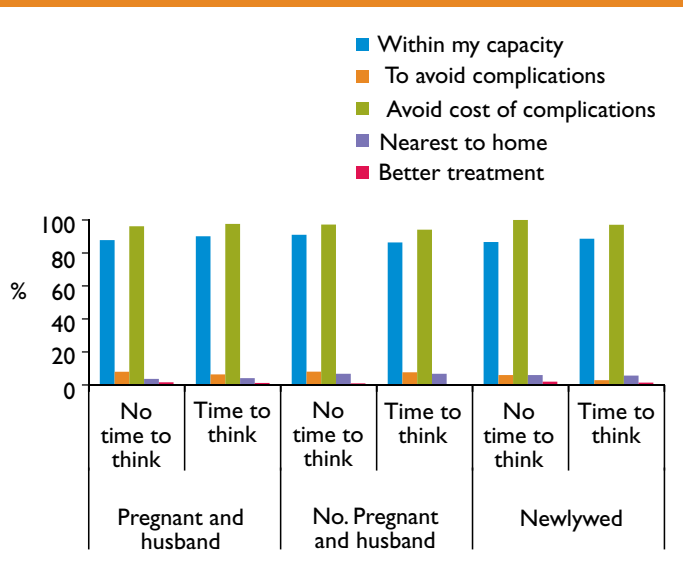
Willingness to pay for Manoshi services by pre-assigned amounts



Evidence from the survey suggests that the reason(s) given behind willingness to pay by most respondents were related to probability of complications during delivery resulting in higher costs whereas the amount asked for registration was found reasonable and within capacity.

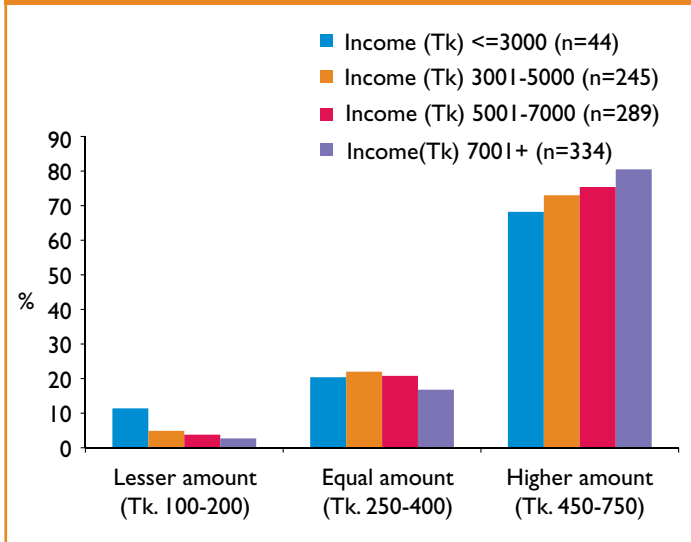
Approximately 76% of the respondents were willing to pay an amount that was higher than the pre-assigned price, while 4% were willing to pay an amount that was less than the pre-assigned price. Twenty percent of the respondents were willing to pay the pre-assigned price that was asked. The majority were willing to pay over Tk. 400 for services from the Manoshi delivery centres. Having time to think did not affect the proportion of respondents willing to pay a minimal amount of less than Tk. 200, but those who had time to think were more likely to select an amount between Tk. 250-400 rather than an amount above Tk. 450. The proportion of respondents willing to pay higher amounts was lower in the TTT group than in the NTT group.

Reasons for willingness to pay for Manoshi services



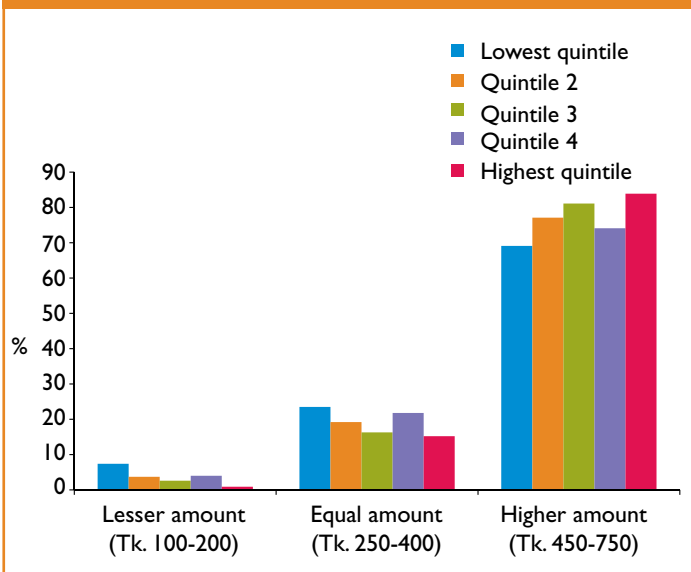
Willingness to pay did not show any correlation ($r = 0.09$) with the respondent's current income level, indicating that WTP is not necessarily dependant on current income level.

Willingness to pay for Manoshi services by income level



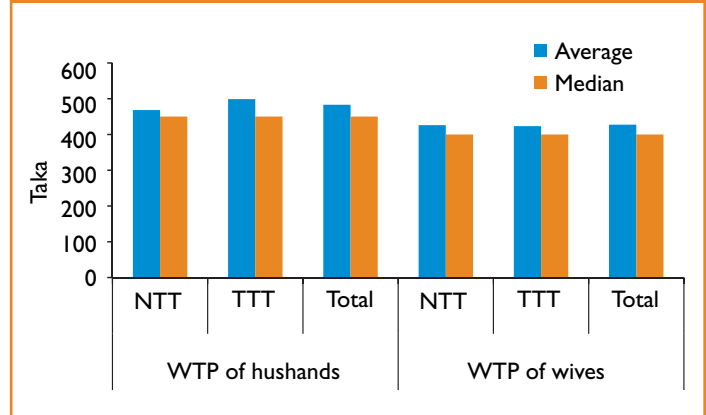
However, while the difference was not significant, findings suggest a trend in increasing WTP with an increase in income. The reasons for which significant differences were not observed were probably because of the high level of interest in the delivery centres among all groups and the relatively small variation in income amongst the survey population which may not allow for the significant variation that would be expected if a more varied population were included.

Willingness to pay for Manoshi services by wealth quintiles



While more respondents in the poorest wealth quintile were willing to pay lower amounts, over three fourths of those in the higher quintiles and 70% in the lowest quintile were willing to pay Tk. 450.

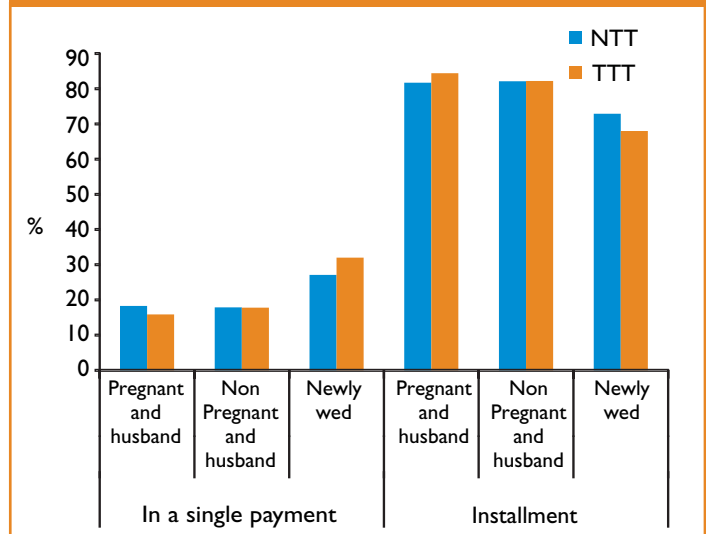
Willingness to pay for Manoshi Services by the husbands and MWRA



Although the difference was not substantial, the average and median WTP of husbands was slightly higher than that of the women. As in many other countries, Bangladesh is a largely patriarchal society where the household heads, who are mostly male, are the decision-makers at the family level. In this context, male involvement and support for programmes like Manoshi is critical for fulfilling the program objective of reducing maternal and child mortality.

The majority of all three categories of respondents preferred payments in installments. However, a third of newlyweds given time to think were willing to make an all-at-one-time payment. The newlyweds preferred the option more than the other groups.

Mode of payment preferred by the respondents



It was documented in the survey that the amount spent for the most recent childbirth prior to the inception of the Manoshi birthing services was close to the current willingness to pay for the delivery centre services. This indicates that respondents are willing to pay an amount that they



A road leading into an urban slum

would expect to pay on average for similar care. Thus the program can introduce a fee and tap resources for financial sustainability. Furthermore, the majority of the respondents reported that the amount was within their ability. In addition they were willing to pay to avoid higher expenses related to complications during pregnancy.

These findings clearly suggest that the community is willing and able to pay the amount asked (and even a bit more) for the use of the services provided by the programme. To maintain targeted coverage and for better acceptance of the registration fees within the community, the program should consider the preferred mode of payment of installments.

- Majority of respondents are willing and able to pay over Taka 400 as registration fees for the services provided by Manoshi.
- Majority of respondents preferred to pay in installments.
- Careful consideration of appropriate waivers or safety net measures for the poorest of the poor should be considered.

Prepared by Tania Wahed. Source: Islam Z, Oliveras E, Saha NC, Islam M, Walker DG, Koblinsky M. Willingness to pay of urban slum dwellers for Manoshi delivery centres in Dhaka, Bangladesh. Unpublished.

For further information on Manoshi research, contact Abbas Bhuiya at abbas@icddr.org or Syed Masud Ahmed at ahmed.sm@brac.net. For more information on the Manoshi programme, contact Kaosar Afsana at afsana.k@brac.net. To subscribe, contact Rumesa Rowen Aziz at rroziz@icddr.org.

Manoshi is supported by the Bill and Melinda Gates Foundation

Published jointly by BRAC and ICDDR,B for Manoshi

