



Pregnant Women Access to Demand Side Financing of Reproductive Health Care and Their Maternal and Neonatal Outcome: A Comparative Study

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

A cross-sectional comparative study was conducted at the Tarail Upazilla (DSF providing) and Pakundia Upazilla (non-DSF providing) in the Kishoreganj district. To estimate the proportion of pregnant women, have access to Demand Side Financing of Reproductive Health Care, and find out their maternal and neonatal outcome contributes to achieving MDG 4 and 5.

The maternal mortality ratio (MMR) in Bangladesh remains one of the highest in the world. To reduce maternal and child mortality and morbidity, the Government of Bangladesh has initiated the Demand Side Financing Maternal Health Voucher Scheme as an intervention program that will contribute to achieving MDG 4 and 5.

Demand-side financing entails poor pregnant women to get more access to maternal health services like ANC, EmOC, skill delivery and PNC. A total of 150 mothers were interviewed by a pretested semi-structured interview questionnaire. Out of 150 mothers, 75 mothers had access to DSF and 75 mothers had no access to DSF.

The study was conducted from 1st January to 31st December 2019. From this study, it was found that the majority of the mother who adopted the maternal health voucher scheme attended antenatal checkups at the Upazila health complex and community clinic at least one time during their pregnancy. In the DSF area, maternal and neonatal outcomes were found better than that of the non-DSF area which contributes to achieving MDG 4 and 5.

The mother who had access to DSF had 93.3 percent normal outcome while the mother who had no access to DSF had 77.4 percent normal outcome. As a result, the maternal and neonatal outcome of DSF recipients' mothers were better than non-DSF recipients' mothers. Demand Side Financing of Reproductive Healthcare is an important national issue that eminently contributes to achieving MDG 4 and 5. There is plenty of scope for further research and places to improve maternal and child healthcare.

Keywords: Reproductive health; maternal; neonatal outcomes; child healthcare.

1. INTRODUCTION

Bangladesh, a country with more than 140 million people, has made considerable progress in improving reproductive, maternal and child health in the last 20 years. Between 1990 and 2011, the under-5 child mortality rate decreased from 133 to 53 per 1,000 live births, a 60% decline; and maternal mortality decreased from 574 to 194 per 100,000 live births, a 66 decline [1].

Failure of the supply-side financing strategy to reach the poor has prompted the Government of Bangladesh to initiate a pilot program called the 'Demand-side financing Maternal Health Voucher Scheme' (MHVS) [2,3]. The most commonly implemented DSF mechanism is one that uses vouchers, defined here as "a token that can be used in exchange for a restricted range of goods or services. Vouchers tie the receipt of cash to particular goods, provided by particular vendors, at particular times. Health care vouchers are used in exchange for health services (such as medical consultations or laboratory test) or health care consumables (such as drugs)" (World Bank 2005) [4].

A pilot program examined whether maternal health care service delivery by trained providers could be improved by providing financial support directly to poor pregnant women and service providers through vouchers. This article presents findings of the pilot program on utilization of ANC, delivery and PNC service [5,6,7]. Demand- and supply-side incentives are increasingly adopted as a health system-

strengthening mechanism to improve access to and quality of maternal health services [8,9]. Mother and child constitute 70% of the total population in Bangladesh.

Children are the future generation and potential resources of the country. Due to poor socioeconomic infrastructure, still they are neglected and uncared but they are the most important element in our society. Lack of utilization of maternal health services is one of the important factors which contribute to high maternal and neonatal mortality and morbidity in the country. Therefore maternal mortality ratio in Bangladesh is still higher than many of the developing countries, like the Maldives, Sri-lanka, etc [10]. (Government of Bangladesh) is giving maximum emphasis to reduce this MMR in many ways, demand-side financing voucher scheme is one of the contributing interventions to reach to our desired goal. "Pregnant women access to demand-side financing of reproductive health care and their maternal and neonatal outcome" is extensive; the influx of evidence on the impact of DSF on maternal health is widely available [11]. Therefore, the piloting of DSF schemes is one way to gather the necessary evidence on implementation and design. Strategically, policymakers are choosing a voucher or other DSF scheme, due to proven the program as a successful one. Through this study, will dictate to determine a comparison between the maternal and neonatal outcomes of pregnant women who have access to DSF and who did not have access to DSF.

2. METHODOLOGY

This study was a cross-sectional comparative study. The study was conducted from 1st January to 31st December 2019. The total sample size was 150 and recipient mothers were selected convenience sampling method from the women who had at least one history of pregnancy and labor. The study place was Tarail Upazilla Health Complex and Pakundia Upazilla Health Complex in Kishoreganj district. Here Tarail is DSF providing upazilla and Pakundia is non DSF providing upazilla. In this research 75 mothers had access to DSF and 75 mothers had no access to DSF. Face to face in-depth interview was conducted by pretested semi-structured interview questionnaire. The data were analyzed by using SPSS version-22.

2.1 Inclusion Criteria for DSF

Poor and vulnerable pregnant women

1. Permanent residents of the union.
2. Pregnant for the first or second time and having used family planning prior to the second pregnancy.
3. Functionally landless (owning less than 0.15 acres of land).
4. Earning extremely low and irregular income or no income (less than Tk. 2,500 per household per month).

5. Owning no productive assets, such as livestock, orchards, rickshaw or van [8].

3. RESULTS

A cross-sectional comparative study was conducted in two selected upazillas. A total of 150 participants from Tarail and Pakundia Upazilla of Kishoreganj. DSF providing 75 and 75 from non DSF providing participants were interviewed with a semi-structured pre-tested interview questionnaire.

The distribution of mothers by their knowledge on the maternal health card. Most of the mothers ie, 60.0 percent of DSF recipient mothers had partial knowledge of health cards, 14.7 percent had complete knowledge, 16.7 percent had little bit knowledge and 6.7 percent had no knowledge on maternal health cards (Table 1).

This figure reveals that 76.8 percent of the DSF recipient mothers received health cards in 13-27 gestational weeks, 15.9 percent received voucher cards in 28-40 gestational weeks and 7.3 percent received health cards within 12 gestational weeks. Maximum DSF recipient's mother received the maternal health card in 13-27 gestational weeks (Fig. 1).

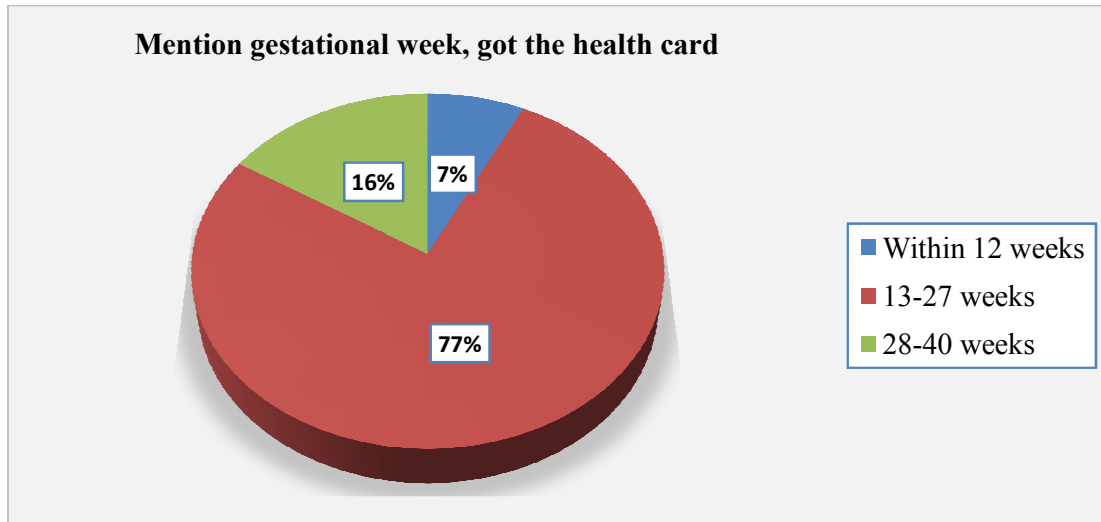


Fig. 1. Distribution of the mother to get the health card in which gestational week

Table 1. Distribution of the mother by their knowledge about maternal health card

Knowledge on voucher scheme	Had Access to DSF		Had no Access to DSF		Total
	No.	%	No.	%	
Don't know at all	5	6.7	75	100.0	80(53.3)
Know little bit	14	16.7	0	0.0	14(9.3)
Know partially	45	60.0	0	0.0	45(20.0)
Know completely	11	14.7	0	0.0	11(7.3)
Total	75	100.0	75	100.0	150(100.0)

The DSF recipient mothers conceived one-time 38.7 percent and conceived two or more times 61.3 percent. Whereas non DSF recipient mothers conceived two or more times 66.7 percent and 36.7 percent conceived one time (Table 2).

The complication during delivery, out of 60 DSF recipient mothers and 62 non-DSF recipient mothers, among them highest number 93.3 percent had no complications during delivery in case of DSF mothers whereas in non DSF recipient mothers 75.8 percent had no complications during delivery (Table 3).

This table represents that for DSF recipient mother's maximum of 97.8 percent were neonatal outcome for the 1st delivery i.e., alive child and only 2.2 percent were a premature baby. Whereas non-DSF recipient mother's neonatal outcome was 77.4 percent as live birth (Table 4).

This table reveals that the DSF recipient mother's neonatal outcome was 100.0 percent during 2nd delivery as live birth whereas for non-DSF recipient mothers this was 64.28 percent (Table 5).

Table 2. Distribution of the mother by their number of times conceived

Number of times conceived	Had Access to DSF		Had no Access to DSF		Total (%)
	No	%	No	%	
1	29	38.7	25	33.3	54 (36.7)
≥2	46	61.4	50	66.7	96 (44.0)
Total	75	100.0	75	100.0	150(100.0)

Table 3. Distribution of the mother by their complication during delivery

Complication during delivery	Had Access to DSF		Had no Access to DSF		Total
	No.	%	No.	%	
Yes	4	6.7	15	24.2	19(15.6)
No	56	93.3	47	75.8	103(84.4)
Total	60	100.0	62	100.0	122(100.0)

Table 4. Distribution of the mother by their neonatal outcome of 1st pregnancy

Neonatal outcome of 1 st pregnancy	Had access to DSF		Had no access to DSF	
	Frequency	%	Frequency	%
Live birth	45	97.8	48	77.4
Still birth	-	-	3	4.8
Abortion	-	-	2	3.2
MR	-	-	3	4.8
Handicapped	-	-	2	3.2
Premature baby	1	2.2	4	6.5
Total	46	100.0	62	100.0

Table 5. Distribution of the mother by their neonatal outcome of 2nd pregnancy

Neonatal outcome of 2 nd pregnancy	Had access to DSF		Had no access to DSF	
	Frequency	%	Frequency	%
Live birth	2	100.0	9	64.28
Still birth	-	-	1	7.16
Dead after birth	-	-	1	7.16
Premature baby	-	-	3	21.4
Total	2	100.0	14	100.0

Table 6. Relationship between mother had access to DSF and did not access to DSF with MNH (Maternal Newborn Health) outcome

DSF and non DSF	MNH outcome				Total (%)	χ^2	P-value
	Normal		Adverse				
	No.	%	No.	%			
Had access to DSF	56	93.3	4	6.7	60(100.0)	7.663	0.006
Had no access to DSF	48	77.4	14	22.6	62(100.0)		
Total	75	50.0	75	50.0	122(100.0)		

3.1 Continuity Correction with 2 Tailed Significant

The Mother who had access to DSF had 93.3 percent normal outcome while the mother who had no access to DSF had 77.4 percent normal outcome. The association between access to DSF and not access to DSF is statistically significant ($p < 0.05$) (Table 6).

4. DISCUSSION

The research was aimed to assess the "Pregnant women access to demand-side financing of reproductive health care and their maternal and neonatal outcome: A comparative study" in two upazilla one DSF (Tarail) and one non DSF (Pakundia) of Kishoreganj districts in Bangladesh.

The maternal health voucher scheme has targeted the poor pregnant women of the community who are unable or have difficulty in bearing the cost of pregnancy and usually do not attend the ANC checkup or institutional delivery [12]. Among the DSF recipient's mother, only two women were service holders and only one was a student. Whereas in non-DSF recipient mothers only one woman was a service holder. (Table 1) Recipient mothers' knowledge on 'maternal health voucher scheme' found that maximum DSF recipient mothers i.e., 60.0 percent had partial knowledge on voucher scheme, 14.7 percent had complete knowledge, 16.7 percent had little bit knowledge and 6.7 percent

did not know about maternal health voucher scheme.

On the other hand, in the case of non-DSF recipient mothers, none of them knew maternal health card (Table 1). Therefore, during the interview, 56.0 percent of DSF recipient mothers already received a voucher scheme (financial benefit) and 44 percent could not receive it yet. Among the DSF recipient mothers, maximum i.e., 76.8 percent DSF recipient mother already received voucher card within 13 to 27 gestational weeks (Fig. 1). 100 percent of DSF recipient mothers attended ANC regularly whereas 96.7 percent of non-DSF recipient mothers attended ANC regularly (Table 4).

A study on home based skilled birth attended the program in Bangladesh revealed that the rate of antenatal care was 93.0 percent [13]. BDHS and BMMS surveys indicate that the rate consistently increases for at least one ANC. Over the past fifteen years, the proportion of women who received at least one ANC has increased from 28 percent in 1993-94 to 71.2% in 2010 [14]. About 93.3 percent of DSF recipient mothers had no complications and 6.7 percent had complications during last delivery (Table 5).

The maternal outcome includes mothers without any complications before and just after delivery, premature labor, gestational hypertension, antepartum hemorrhage, multiple pregnancies, postpartum hemorrhage, maternal death and others. The neonatal outcome includes live birth, live birth with a birth defect, stillbirth, low birth

weight, premature baby, handicapped and others. 97.8 percent DSF and 77.4 percent non-DSF recipient mother's neonatal outcome for the 1st delivery was an alive child and only 2.2 percent were premature babies (Table 6). 100.0 percent DSF and 64.28 percent non-DSF recipient mothers' neonatal outcome for the 2nd delivery was a live child (Table 6).

The mother who had access to DSF had 93.3 percent normal outcome while the mother who had no access to DSF had 77.4 percent normal outcome. The association between access to DSF and not access to DSF is statistically significant ($p < 0.05$) (Table 6).

5. CONCLUSION

It can be concluded that the majority of the mother who adopted the maternal health voucher scheme attended antenatal checkups at the Upazila health complex and community clinic at least one time during their pregnancy. It was also found that the percentage of home delivery with a skilled birth attendant was higher than the overall institutional rate. It is to be mentioned that DSF recipient mothers received more PNC than the non-DSF recipient mothers. In DSF areas, significant improvements in the use of ANC, skilled delivery and postpartum care are noted; out-of-pocket expenses are reduced. Relatively less complication occurred during pregnancy and labor in the case of DSF recipient mothers concerning non-DSF recipient mothers. At the same time complication faced by DSF recipient mothers during pregnancy and delivery received more help from health personnel than non-DSF recipient mothers. As a result, the neonatal outcome of DSF recipients' mothers was better than non DSF recipients' mother. In this research, it was observed that in the majority of cases, the voucher cards were distributed to the eligible mother, not in time. From the perspective of this research finding, it is essential to increase the monitoring and evaluation of the maternal health voucher scheme by the program management.

CONSENT

As per international standard or university standard, patients' written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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