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RESEARCH ARTICLE

The Bangladesh Maternal Health Voucher Scheme: impact on completeness of antenatal care provision

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Abstract

This study aimed to assess completeness of antenatal care coverage following implementation of a voucher scheme for maternal health in Bangladesh. The investigation used interview data from a survey conducted in Bangladesh in 2017 of 2400 randomly selected women aged 15–49 with children aged 0–23 months in four geographical areas where voucher scheme implementation was underway. Of these women, 1944 had attended at least one antenatal clinic visit so were included in the analysis. A 'completeness index' for antenatal visits was constructed as an outcome variable based on recall of thirteen elements of care. Bivariate analysis against independent variables of interest was carried out and multivariate linear regression models developed to examine the influence of voucher scheme participation on completeness of antenatal care adjusting for socio-demographic characteristics. Voucher scheme membership was associated with higher 'completeness index' scores, with a mean score of 185.2±101.0 for voucher recipients and 139.6 ± 93.3 for non-recipients ($p<0.001$). Scheme membership reduced the differentials associated with health facility type and socioeconomic status. Women from the lowest socioeconomic group who were voucher recipients received substantially more components of antenatal care (mean score: 159.6±82.1) compared with non-recipients (mean score: 115.7±83.0). This favourable effect of voucher scheme membership on the most vulnerable socioeconomic group remained significant after adjusting for educational status. The Bangladesh voucher scheme model has the potential to maximize gains in maternal and newborn health through enhancing the completeness of service provision.

Keywords: Antenatal Care; Demand-side Financing; Low Performing area in Bangladesh

Introduction

Bangladesh has made substantial progress over the past decade in maternal and child health. Estimates for the maternal mortality ratio declined from 574 per 100,000 live births in 1990 to 176 in 2015, close to the MDG target of 143 (NIPORT *et al.,* 2012; Bangladesh Planning Commission, 2013; MMEIAG, 2015). The under-five mortality rate declined from 151 per 1000 live births in 1990 to 41 per 1000 live birth in 2013, thereby achieving the MDG-4 target ahead of the stipulated time (NIPORT *et al.*, 2016). Despite this progress, considerable challenges remain in ensuring comprehensive access to services, with barriers such as out-of-pocket expenses delaying care seeking, resulting in risk of complications. Nationally representative surveys indicate inequities in access to service among the different population sub-groups, such as the poor, less educated and those residing far from health facilities (NIPORT *et al.,* 2016).

A range of interventions have been tested to overcome barriers to service access among marginalized groups. Voucher schemes for health services have been introduced in a number of low- and middle-income countries to increase demand for services among targeted groups and are used to reduce the burden of out-of-pocket expense. These voucher-based systems are a form of 'demand side' financing and contrast with the traditional 'supply side' approach to financing service delivery. They include a range of interventions that channel government or donor subsidies to service users rather than to service providers (Talukder *et al.*, 2014). These interventions are intended to incentivize certain positive behaviours such as in-facility childbirth or antenatal care (ANC), either through direct cash payments, or by subsidizing providers for offering key services to vulnerable clients. Regular antenatal care that allows screening for risk factors, identification of pre-existing medical conditions and assessment of current health status has been found to have significant positive impact on health of the mother and their child. However, while many women visit a health facility during their pregnancy, in many countries few do this at the recommended intervals in the World Health Organization (WHO) 'focused' antenatal care model, widely taken up in national health systems as a standard of care and recently extended to eight contacts. Gaps in utilization contribute to a persistent burden of adverse maternal and newborn outcomes and voucher provision has the potential to encourage women to make use of the full range of services available. Beneficiaries of voucher schemes have been shown to be well aware of the advantage of accessing modern medical facilities and therefore tend to seek care from qualified providers rather than from traditional or unqualified practitioners (Menotti & Farrell, 2016). The scope for voucher schemes to increase access to maternal and newborn care is confirmed in a systematic review of programming in low- and middle-income countries. However, the review also noted that poor behaviour of health care staff could deter women from using such demand-side schemes or result in negative experiences of care (Murray *et al.*, 2014).

Bangladesh introduced the Maternal Health Voucher Scheme (MHVS) in 2007. The scheme was initiated as a pilot in 21 sub-districts and currently operates in 53 of 556 sub-districts. Targeted so as to serve poor pregnant women, the MHVS covers three ANC visits, delivery at a health facility, one postnatal check, management of maternal complications including Caesarean delivery where required, free medicines, cash allowances for transport and a cash incentive to deliver at a health facility. The voucher can be used at both public hospitals and at designated private and non-government facilities. Provider facilities and individual staff also receive a payment for each service delivered to the scheme participants (Ahmed & Khan, 2010; Anwar *et al.,* 2013). This study aimed to examine the impact of implementation of the maternal health voucher scheme on the completeness of antenatal care received, against the context of differentials of socioeconomic status and utilization of different facility types.

Methods

Study design and study site

A cross-sectional survey was carried out in two of the low-performing divisions of Bangladesh – Chattogram and Sylhet – during January to June 2017. This allowed differences in the content of antenatal care received during visits to be assessed between voucher recipients and non-recipients. These areas are considered low-performing in terms of maternal and reproductive health indicators in the country. For instance, compared with national estimates (46 per 1000 live births) under-five mortality is higher in Sylhet (50 per 1000 live births) and Chattogram (67 per 1000 live births) divisions (NIPORT *et al.*, 2016). In Sylhet division, 22.6% of births took place at a health facility and in Chattogram division 35.2% took place at a health facility – lower than the national estimates of 37.4% (NIPORT *et al.*, 2016). Moreover, fewer births were attended by professional staff in these two divisions – 15.7% in Sylhet and 28.7% in Chattogram compared with the national rate of 30.9% (NIPORT *et al.*, 2016). Thus, from Chattogram district two sub-districts, Ramu and Teknaf, were selected from the total eleven voucher areas and from Sylhet district two sub-districts, Srimongal and Shulla, were randomly chosen from the five voucher areas.

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Sample size and respondents

A list was made of women aged 15–49 years who had given birth in the previous 2 years, giving 1446 eligible women in Chattogram and 1502 in Sylhet. In each study sub-district 600 women were interviewed giving a total of 2400. Voucher recipient status was not identified prior to selection.

Data collection

A team of 20 female interviewers, two experienced supervisors and one statistician undertook and supervised the data collection process. A quality-control team consisting of a quality-control officer and three re-interviewers re-visited 5% of the households, chosen randomly, within 2 days of data collection by the field workers. Subsequently the supervisors and the relevant field-workers together resolved any inconsistencies. Completed questionnaires were checked for completeness and for any inconsistencies. Subsequently, computer-based data editing procedures were applied to ensure the quality of data.

Dependent variable

The dependent variable was an antenatal care 'completeness index', computed from the thirteen items relating to elements of care received at the last visit in the most recent pregnancy using principal component analysis (PCA). The items included took into account WHO and Bangladesh national guidelines and services available at the study sites (Heredia *et al.*, 2016). Items included were clinical procedures such as blood pressure measurement, provision of advice regarding delivery dates and danger signs, blood tests, treatment given and whether the spouse was encouraged to attend clinics with the client (Table 1). In PCA, the first component (a linear combination of the items weighted by the coefficient or factor loading) that possesses maximum variability in the data was used to calculate the score or index. Of the thirteen items, clinical assessment regarding collection of a blood sample showed the highest unique variance (0.3667) and communication of the expected delivery date had the lowest unique variance (0.1284). Standardized values for each item were calculated producing positive scores for those who received the service and negative scores for those who did not. Information on whether the service was necessary or not was not available, so scores for non-received items were set to zero in the final PCA-derived completeness index. Finally, the completeness index ranged between 0 and 4.02, where higher scores indicated greater completeness of antenatal care.

Independent variables

Socioeconomic and demographic characteristics of the women were considered as independent variables. These included voucher recipient status (recipients, non-recipients), age (continuous; range: 15–49 years), education (continuous; range: 0–17 years of schooling), access to mass media (yes/no), health services used (home, hospital, clinic) and asset quintile (lowest, second, middle, fourth, highest) using principal component analysis of housing characteristics such as roof and wall materials, and the number of rooms and ownership of durable assets observed by the interviewers (Filmer & Pritchett, 2001). The assets score was then used to categorize respondents into five equal groups (quintiles), where the first quintile was the poorest 20% of households and the fifth quintile was the wealthiest 20% of households.

Statistical analyses

Among the interviewed women (2400), 81% (1944) reported attending at least one antenatal care visit. Consequently, 456 women were excluded from the analysis as service components received could not be estimated. Both bivariate and multivariable analyses were performed. The analyses examined the distributions of elements of care received by socioeconomic status quintiles and

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Table 1. Antenatal care elements received at last ANC visit by voucher recipient status, Chattogram and Sylhet, Bangladesh 2017

Antenatal care element	Voucher recipients (*N*=452) *n* (%)	Voucher non-recipients (*N*=1492) *n* (%)	All women (*N*=1944) *n* (%)	*p*-value
Clinical assessment				
Blood pressure check	378 (83.6)	1242 (83.2)	1620 (83.3)	ns
Abdominal examination	447 (98.9)	1450 (97.2)	1897 (97.6)	0.038
Listening to fetal heart	344 (76.1)	1055 (70.7)	1399 (72.0)	0.025
Collection of blood sample	193 (42.7)	431 (28.9)	624 (32.1)	<0.001
Collection of urine sample	219 (48.5)	517 (34.7)	736 (37.9)	<0.001
Advice				
Expected delivery date	373 (82.5)	1,103 (73.9)	1476 (75.9)	0.001
Where to deliver	307 (67.9)	619 (41.5)	926 (47.6)	<0.001
What to do in case of bleeding	136 (30.1)	226 (17.8)	402 (20.7)	<0.001
What to do if baby stops moving	254 (56.2)	590 (39.5)	844 (43.4)	<0.001
What kind of food to eat while pregnant	308 (68.1)	899 (59.6)	1197 (61.6)	0.001
Items to bring for the birth	58 (12.8)	104 (7.0)	162 (8.3)	<0.001
Treatment				
Given iron/folic acid tablets	356 (78.8)	1077 (72.2)	1433 (73.7)	0.005
Male participation				
Husband encouraged to attend ANC with partner	133 (29.4)	455 (30.5)	588 (30.3)	ns

ns: not significant.

facility among voucher recipients and non-recipients. Chi-squared tests were used to assess statistical significance. In addition, mean ANC completeness scores by asset quintile, *t*-tests and one-way variance (ANOVA) *F*-tests were performed to assess the statistical significance of associations between completeness scores with the socioeconomic status and health service used of the respondents. To examine the crude and net effect of voucher membership, multivariable linear regression models were applied with 95% confidence intervals (CIs), adjusting for other socio-demographic characteristics. For simplicity of presentation, mean index values were multiplied by 100. All analyses were undertaken in STATA software for Windows (STATA/SE version 14.2).

Results

Table 1 shows the thirteen elements of care recalled by the women as received during their last ANC consultation. Of the 1944 total women, 452 (23.3%) were voucher recipients and 1492 (76.7%) were not voucher recipients. For each element of care, voucher recipients reported receiving a higher percentage of mandated services than their counterpart non-recipients.

Table 2 shows the distribution of the sample women by socioeconomic status (asset index), place of ANC consultations and number of elements of ANC received. Antenatal consultations took place either at the respondent's home through outreach visits organized by service providers (15.9%), at clinics (63.1%) and in hospitals (20.9%). Voucher recipients were more likely to receive ANC consultations at hospitals/clinics (94%) than non-recipients (81.1%). About 32% of voucher

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Table 2. Socioeconomic status (asset index quintile), place of ANC service delivery and number of ANC elements received at last ANC visit by voucher scheme membership status

	Voucher recipients *n* (%)	Voucher non-recipients *n* (%)	All women *n* (%)	*p*-value
Asset index				
Lowest	76 (16.8)	272 18.2	348 17.9	0.042
Second	73 (16.2)	289 (19.4)	362 (18.6)	
Middle	97 (21.5)	288 19.3	385 19.8	
Fourth	112 (24.8)	286 (19.2)	398 (20.5)	
Highest	94 (20.8)	357 (23.9)	451 (23.2)	
Place of ANC service delivery				
Home	27 (6.0)	282 (18.9)	309 (15.9)	<0.001
Hospital	187 (41.4)	219 (14.7)	406 (20.9)	
Clinic	238 (52.7)	988 (66.4)	1226 (63.2)	
No. ANC elements received				
0–4	65 (14.4)	359 (24.1)	424 (21.8)	<0.001
5–9	241 (53.3)	888 (59.5)	1129 (58.1)	
10–13	146 (32.3)	245 (16.4)	341 (20.1)	
Number of women	452 (100.0)	1492 (100.0)	1944 (100.0)	

recipients reported receiving ten or more mandated elements of ANC compared with only 16.4% of non-recipients.

Table 3 shows the ANC completeness scores for women by socioeconomic status (asset index) and place of ANC consultations. Voucher membership was associated with more complete ANC, with a mean completeness score of 185.2±101.0 for voucher recipients and 139.6±93.3 for non-recipients ($p<0.001$). More complete ANC was received by those in higher asset quintiles, with a mean score of 125.3±84.7 in the lowest and 180.7±105.1 in the highest asset quintiles ($p<0.001$). Antenatal care was most complete among those receiving clinic-based services (159.4±99.4) followed by hospital-based services (142.2±96.3), with home-based outreach services being the least complete (124.7±81.9). For each asset quintile and for each type of health service, voucher membership was associated with greater completeness of ANC. The mean completeness score for voucher recipients in the lowest asset quintile (159.6±82.1) was higher than for all non-recipients up to the fourth asset quintile (141.9±96.3 for non-recipients in fourth quintile). Voucher recipients received more complete ANC regardless of women's socioeconomic status compared with non-recipients. However, women in the highest quintile received relatively complete ANC irrespective of their membership status. Voucher recipients in the lowest quintile experienced a similar level of completeness irrespective of type of health facility used, whereas significant differentials were observed among non-recipients ($p<0.001$).

Table 4 shows the results of the multiple linear regression analysis, confirming the favourable effect of voucher membership on completeness of ANC after adjusting for covariates.

Discussion

The adoption and scaling-up of demand-side financing (DSF) models has become popular among policymakers in less-developed countries as an instrument to improve access to maternal and

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Table 3. Mean ANC completeness score by socioeconomic status (asset index quintile) and place of ANC service delivery

	ANC completeness score								
	Voucher recipients			Voucher non-recipients			All women		
	Mean (SD)	IQR	*p*-value	Mean (SD)	IQR	*p*-value	Mean (SD)	IQR	*p*-value
Asset index									
Lowest	159.6 (82.1)	124.1	0.007	115.7 (83.0)	103.1	<0.001	125.3 (84.7)	117.4	<0.001
Second	164.5 (103.5)	151.2		123.1 (83.1)	121.7		131.4 (89.0)	146.2	
Middle	186.1 (96.1)	171.0		134.6 (85.7)	124.5		147.6 (90.8)	138.5	
Fourth	196.0 (101.5)	156.1		141.9 (96.3)	147.4		157.2 (100.7)	147.2	
Highest	208.2 (111.9)	224.9		173.4 (102.2)	162.1		180.7 (105.1)	181.3	
Place of ANC service delivery									
Home	162.8 (113.8)	174.0	ns	121.1 (77.4)	99.7	<0.001	124.7 (81.9)	107.8	<0.001
Hospital	183.5 (97.3)	159.3		106.9 (80.2)	96.0		142.2 (96.3)	147.7	
Clinic	189.1 (102.4)	174.0		152.2 (97.4)	155.4		159.4 (99.4)	159.4	
All	185.2 (101.0)	177.0		139.6 (93.3)	141.5		150.2 (97.0)	151.7	<0.001

SD=Standard Deviation; IQR=Interquartile range; ns=non-significant.

Table 4. Unadjusted and adjusted measure of associations for voucher membership status and respondent socio-demographic and health characteristics with ANC completeness score

	Crude		Multivariable-adjusted[a]	
	Coefficient (95% CI)	*p*-value	Coefficient (95% CI)	*p*-value
Voucher membership				
No (Ref.)	0		0	
Yes	0.46 (0.35, 0.56)	<0.001	0.37 (0.27, 0.47)	<0.001
Constant	1.40 (1.35, 1.44)	<0.001	0.68 (0.46, 0.91)	<0.001

[a]All results adjusted for women's socioeconomic status, age, education, number of ANC visits, access to mass media and household Non-governmental Organization (NGO) membership. Ref.: reference category.

child health services. Studies from different countries confirm higher utilization of health care services as a result of DSF (Bhatia *et al.*, 2006; Bhatia & Gorter, 2007; Anwar *et al.*, 2008; Mahmood *et al.*, 2019). This study evaluated the effect of a voucher scheme programme as a tool of DSF on access to, and utilization of, antenatal care with special emphasis on completeness of access to different components of care considered medically necessary and useful. Consistent with results reported in similar settings, voucher membership increases access and completeness of ANC based on women's recollection of components they have received (Lim *et al.*, 2010; Ahmed & Khan, 2011; Målqvist *et al.*, 2013).

The study show that the Bangladesh voucher scheme significantly improved women's utilization of ANC and enabled them to receive more components of care for socioeconomic groups. The mean ANC completeness score among poorer voucher recipients was higher than that for women non-recipients up to the fourth asset quintile. This favourable effect remained after adjusting for other variables, most notably educational status, which may influence how women are

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treated by clinical staff during consultations. Around 32% of voucher recipients – double the percentage of non-recipients – reported receiving at least ten of the thirteen elements of ANC care included in the analysis. Differentials in the mean ANC completeness score were also observed to be lower among voucher recipients by ANC service type, indicating an increase in equity of provision associated with voucher membership. The findings are also consistent with the recent 2014 Bangladesh Demographic and Health Survey (BDHS) with regard to typical elements of ANC reportedly received by women, although the latter used a longer recall period and did not specifically ask about the last ANC visit for a particular pregnancy (NIPORT *et al.*, 2016). The BDHS reported that during pregnancy blood pressure was measured in 88.2% and a urine sample was collected in 64.6% of cases: here the rates were 83.3% and 37.9%, respectively. Regular monitoring of blood pressure is essential as a means of screening for pre-eclampsia, and this is especially important in late pregnancy. The findings of this study indicate that there is scope for further improvement in ensuring complete adherence to clinical best practice.

Under current conditions in Bangladesh, voucher membership seems to increase women's receipt of the essential components of antenatal care. Voucher receipt was found to be associated with access to more components of antenatal care across all asset quintiles. There may be reservations regarding the fidelity of the targeting process used for enrolment in the voucher scheme, as membership was noted across the range of asset indices. Notwithstanding, there is good evidence for a favourable impact across all asset quintiles in terms of components of ANC. In a setting where previous low utilization and highly restricted access have been overcome through both demand- and supply-side initiatives, a new focus on quality of provision is of critical importance, so that maximal gains in maternal and newborn health are realized from these investments.

The WHO has recently advocated extension of the range of antenatal components of care within a framework of eight contacts. This approach may be too ambitious for countries that still struggle to attain coverage of four visits with an adequate level of quality, and there is a risk that extending the number of contacts without a large-scale increase in resources could compromise quality. In Bangladesh, a currently attainable enhancement of ANC provision could be to increase the number of visits covered by the voucher scheme from three to four.

It will be necessary in future research to cross-check women's recollections of care received with exit interviews, observation of care and feedback from health care professionals to obtain a fully rounded picture of the provision and experience of care. There are, however, sufficient pointers from the current findings to propose testing of demand-side initiatives aimed at enhancing women's knowledge about their care and their ability to engage effectively with health care professionals. The scheme should aim towards a care model that represents a partnership between client or patient and provider based on mutual understanding. Studies of sufficient scale with power to detect differences in maternal and neonatal outcomes are also required, alongside health economic analyses to identify optimal targeting approaches, appropriate levels of voucher benefits and cost-effectiveness of the scheme.

The study has its limitations. The implementation of voucher schemes in Bangladesh has been restricted to certain districts, so it was not possible to examine voucher-related effects on coverage or quality at a national level. Women may have difficulty recalling the details of previous antenatal consultations during interviews, but the inclusion of pregnancies leading to births within the previous 2 years and reporting on last ANC attended may have aided accurate recall. In addition, the study was not able to cross-check reported elements of care received against clinical records such as blood pressure or blood test results or undertake contemporaneous exit interviews.

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Conflicts of Interest. The authors have no competing interests to declare for this study.

Ethical Approval. The study was approved by the Ethical Review Committee (ERC) of the International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b) (NIH reference number 0000182). Informed written consent was taken from all respondents, and confidentiality and anonymity of respondents were ensured.

References

Ahmed S and Khan MM (2010) A maternal health voucher scheme: what have we learned from the demand-side financing scheme in Bangladesh? *Health Policy and Planning* **26**(1), 25–32.

Ahmed S and Khan MM (2011) Is demand-side financing equity enhancing? Lessons from a maternal health voucher scheme in Bangladesh. *Social Science & Medicine* **72**(10), 1704–1710.

Anwar I, Blaakman A and Akhter S (2013) *Program Evaluation for Demand Side Financing Maternal Health Voucher Scheme in Bangladesh: Final Report.* HERA, Reet, Dhaka, Bangladesh.

Anwar I, Sami M, Akhtar N, Chowdhury M, Salma U, Rahman M *et al.* (2008) Inequity in maternal health-care services: evidence from home-based skilled-birth-attendant programmes in Bangladesh. *Bulletin of the World Health Organization* **86**, 252–259.

Bangladesh Planning Commission (2013) *Millennium Development Goals: Bangladesh Progress Report 2015.* Bangladesh Planning Commission, Dhaka, Bangladesh.

Bhatia M and Gorter A (2007) Improving access to reproductive and child health services in developing countries: are competitive voucher schemes an option? *Journal of International Development* **19**(7), 975–981.

Bhatia M, Yesudian C, Gorter A and Thankappan K (2006) Demand side financing for reproductive and child health services in India. *Economic and Political Weekly* **41**(3), 279–284.

Filmer D and Pritchett LH (2001) Estimating wealth effects without expenditure data—or tears: an application to educational enrolments in states of India. *Demography* **38**(1), 115–132.

Heredia PI, Servan ME, Darney BG, Reyes M and Lozano RH (2016) Measuring the adequacy of antenatal health care: a national cross-sectional study in Mexico. *Bulletin of the World Health Organization* **94**(6), 452.

Hulton L, Matthews Z and Stones RW (2000) *A Framework for the Evaluation of Quality of Care in Maternity services*. URL: https://eprints.soton.ac.uk/40965/1/12757_Matthews.pdf (accessed 16th June 2019).

Lim SS, Dandona L, Hoisington JA, James SL, Hogan MC and Gakidou E (2010) India's Janani Suraksha Yojana, a conditional cash transfer programme to increase births in health facilities: an impact evaluation. *The Lancet* **375**(9730), 2009–2023.

Mahmood SS, Amos M, Hoque S, Mia MN, Chowdhury AH, Hanifi SM *et al.* (2019). Does healthcare voucher provision improve utilisation in the continuum of maternal care for poor pregnant women? *Experience from Bangladesh. Global Health Action* **12**(1), 1701324.

Målqvist M, Yuan B, Trygg N, Selling K and Thomsen S (2013) Targeted interventions for improved equity in maternal and child health in low-and middle-income settings: a systematic review and meta-analysis. *PLoS One* **8**(6), 66453.

MMEIAG (2015) *Maternal Mortality in 1990–2015.* Maternal Mortality Estimation Inter-Agency Group, URL: https://data.worldbank.org/indicator/SH.STA.MMRT?locations=BD (accessed 1st June 2019).

Menotti EP and Farrell M (2016) Vouchers: a hot ticket for reaching the poor and other special groups with voluntary family planning services. *Global Health: Science and Practice* **4**(3), 384–393.

Murray SF, Hunter BM, Bisht R, Ensor T and Bick D (2014) Effects of demand-side financing on utilisation, experiences and outcomes of maternity care in low-and middle-income countries: a systematic review. *BMC Pregnancy and Childbirth* **14**(1), 30.

NIPORT, Mitra and Associates, ICF International and ICBBR,B (2012) *Bangladesh Maternal Mortality and Health Care Survey 2010.* National Institute of Population Research and Training (NIPORT) and ICF International, Dhaka, Bangladesh; MEASURE Evaluation and ICDDR,B, Dhaka, Bangladesh,

NIPORT, Mitra and Associates and ICF International (2016) *Bangladesh Demographic and Health Survey 2014.* Bangladesh National Institute of Population Research and Training (NIPORT) and ICF International, Dhaka, Bangladesh.

Talukder MN, Rob U, Musa S, Bajracharya A, Keya KT, Noor FR *et al.* (2014) Evaluation of the impact of the voucher program for improving maternal health behavior and status in Bangladesh. *Population Council*, doi 10.31899/rh10.1000.

Tunçalp Ö, Were W, Maclennan C, Oladapo O, Gülmezoglu A, Bahl R *et al.* (2015) Quality of care for pregnant women and newborn – the WHO vision. *BJOG: An International Journal of Obstetrics & Gynaecology* **122**(8), 1045–1049.

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