Original Article

UTILIZATION OF MATERNAL HEALTH CARE SERVICES IN SLUM AREAS OF DHAKA CITY, BANGLADESH

Housne Ara Begum[1], Nilufar Yeasmin Nili[2], Amir Mohammad Sayem[3]

[1]Institute of Health Economics, University of Dhaka; [2]Directorate General of Health Services (DGHS), Dhaka, Bangladesh; [3]Department of Population Sciences, University of Dhaka, Dhaka, Bangladesh

Abstract

Bangladesh has one of the highest maternal mortality rates (MMR) in the world. The estimated lifetime risk of dying from pregnancy and childbirth related causes in Bangladesh is about 100 times higher compare to developed countries. However, utilization of maternal health care services (MHCS) is notably low. This study examines the socio-economic determinants of utilization of MHCS in some slum areas of Dhaka city. The overall utilization was 86.3% of women; however, utilization of different sorts of MHCS was very low, i.e., the mean utilization was found to be 2.25 out of 5 MHCS. Indicator wise, ANC, TT, institutional delivery, delivery assistance by health professional and PNC were received by 61.3%, 80.4%, 12.6%, 33.2% and 55.4% of women respectively. Variation was observed with different socio-economic variables. Multiple regression model could explain 38% of variance ($P < 0.001$). Among the significant determinants, order of last birth negatively explained the most variance (15.2%). Similarly, distance between home and clinic was found to affect the utilization negatively. Besides, some respondents' socio economic variables had a significant positive effect on MHCS utilization. To reduce maternal mortality in disadvantaged women in slum areas, this study might suggest a few pointers while considering formulation of policies and planning.

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Introduction

Over half a million women from the developing world die each year of causes related to pregnancy and childbirth.[1] There are about 500 maternal deaths for every 100,000 live births, and around 10 per cent of the pregnancies are at high-risk.[2] Maternal mortality is on average 18 times higher in developing countries compared to developed countries.[3] In addition to the number of deaths in each year, over 50 million women suffer from maternal morbidity due to acute complications from pregnancy.[4]

Despite the presence of strategic and programmatic initiatives in order to reduce maternal and child health, maternal mortality and child mortality and morbidity continue to be high. Bangladesh has one of the highest maternal mortality rates (MMR) in the world, i.e. 3/1000 live births.[5] The tragic consequence of these deaths is that about 75% of the babies born to these women also die within the first week of their lives. On the other hand, infant and child mortality are respectively 52 per 1000 live birth and 14 per 1000 children.[6]

The reason of such maternal and child health scenario in Bangladesh is mainly due to several factors, an important one being non-utilization or under-utilization of maternal health-care services, especially amongst the rural poor and urban slum population due to either lack of awareness or access to health-care services. With respect to such reality it is very crucial to understand the factors that determine the use of such service in order to increase the further utilization of

Address for Correspondence:
Dr. Housne Ara Begum, Associate Professor, Institute of Health Economics, University of Dhaka, Dhaka-1000, Bangladesh

MHCS among the poor women. However, studies on these are almost absent or very limited. This study was carried out to examine the socio-economic, demographic and cultural factors affecting the utilization of MHCS among women aged 15-49 years.

Methods and Materials

The data used in this study were collected from three randomly selected slum dwelling women of reproductive age through a semi structured survey questionnaire which included the socioeconomic, demographic and cultural characteristics of respondents as well as the family, and utilization of maternal health care services in their last pregnancy. The slums were identified applying the cluster sampling technique. From the three slums, 540 women were successfully interviewed. Simple linear regression analysis was considered at multivariate level in order to identify the factors affecting the utilization of maternal health services. In this regard, the following equation was used to estimate the regression coefficients:

$$Y = a + b_1 * X_1 \ldots\ldots\ldots\ldots + b_k * X_k + e$$

Where, Y = dependent variable, a = constant, b = the regression coefficient, X = independent variables of the model, K = end number of the series, e = error term.

Results

Utilization of Maternal Health Care Services

Utilization of the number of services by the women in general was lower than expected. On average, women utilized 2.25 MHCS with standard deviation 1.46. Among 86.3% women who utilized MHCS, 21.1%, 17.8% and 29.4% of them utilized respectively 1, 2 and 3 MHCS while only 9.8% and 8.1% women respectively utilized 4 and 5 MCHS.

A pattern of MHCS utilization was observed with the age of the women in the slum areas; the older the age, the less likely was the likelihood that they utilized the MHCS (Figure 1). On average, women aged <20 and 20-29 utilized respectively 2.53 and 2.58 MHCS. On the other hand, 2.22 and 1.42 MHCS were respectively utilized by women aged 30-39 and 40-49 years.

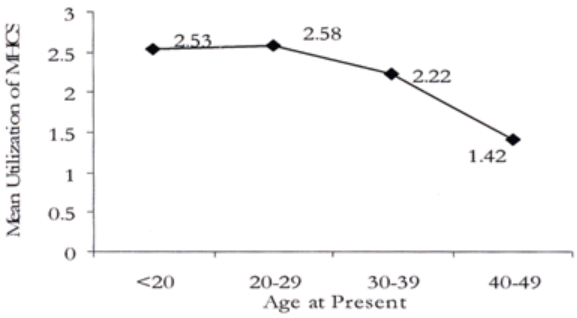

Fig-1. *Utilization of MHCS by respondent's age at present*

The indicators of MHCS were ANC, TT, place of delivery, assisted delivery and PNC. Specifically, ANC, TT and PNC service utilization were higher than other MHCS. More than two-fifth women utilized 3 visits during their last pregnancy while 80.4% and 55.4% women respectively utilized TT and PNC services (Table 1). Home delivery was done by 87.4% of women against 12.6% institutional delivery while 66.8% women were delivered by traditional birth attendants against 33.2 by a medically trained professional.

Correlates of Utilization of Maternal Health Care Services

The utilization of maternal health care services was found to differ with varying socio-economic, demographic and cultural characteristics and with

Table-1: *The distribution of indicators based utilization of maternal health care services*

MHCS Indicators	Categories	N	%
Number of ANC	None	209	38.7
	1-2	83	15.4
	>=3	248	45.9
Receive of TT	Yes	434	80.4
	No	106	19.6
Place of Delivery	Home	472	87.4
	Institution	68	12.6
Delivery Assistant	Medically trained or Professional	139	33.2
	Traditional dai (TBA)	361	66.8
Receive of PNC	Yes	299	55.4
	No	241	44.6

different categories of each independent variable (Table 2). Women's education with moderate correlation (0.343) was found statistically significant at $P < 0.05$. Women with primary and primary+ education were found to utilize more of the MHCS than women with no education. On average, 2.53 and 3.14 MHCS were respectively used by women with primary and more than primary education against use of 1.77 MHCS by women with no education. Similar to women's education, a significant positive relationship was observed by background schooling, respondent's autonomy, positive attitude towards MHCS, male participation in maternity care, mass media exposure, consumable goods, monthly family income and husband's monthly income indicating a higher utilization with higher levels in such characteristics.

Besides, the order of last birth had a significant negative association with utilization of MHCS. On average, women who had given only one birth utilized 2.92 MHCS which almost gradually decreased to around 1.72 among women who had given birth to more than 6 children. Almost similarly, distance form home to clinic and respondent's age at last birth had significant association with utilization of MHCS suggesting that women whose households were far away from clinic and who were older were more likely to utilize MHCS less than those women whose household was nearer to the clinics and were at a younger age.

Determinants of Utilization of MHCS

Simple linear regression technique was used to examine the determinants of utilization of maternal health care services. Before running regression model, assumptions of linear regression like interval level of measurement, linear relationship and no-multicolineanrity were met. All the variables significant at bi-variate analysis were included into the regression models; however, at multivariate analysis all the variables were not found to have significant explanatory power on dependent variables mainly due to the removal of effect by other variables as stepwise method was used.

The overall regression model explained 38.0% (Adjusted R Square) of variance with $P < 0.001$ in utilization of MHCS (Table 3). The most explanatory variable was order of the last birth which alone explained 15.2% variance ($P < 0.001$) indicating that women's higher birth order of the last child were less likely to utilize MHCS in slum areas. With similar direction to order of last birth, distance between home and clinic and age at last birth respectively explained 3.0% and 0.6% of variance.

Consumable goods was found to have a positive influence on the dependent variable explaining 7.5% of variance which is the second most significant variable indicating that women with higher number of consumable goods were more likely to utilize MHCS. Among others, respondents' autonomy, background schooling, male participation, monthly family income, husband's monthly income, mass media exposure, and respondents' attitude towards MHCS respectively explained 5.9%, 2.2%, 1.4%, 1.0%, 1.0%, 0.7% and 0.7% of the variance.

Discussion

Over all, the level of the utilization of maternal health care services was no satisfactory in the slum areas. On average, women received 2.25 MHCS. Due to the greater confidence and experience of the older and higher parity women together with greater responsibilities within the household and for child care, these women were more likely to utilize maternal health care services.[7] However, in this study, the findings were opposite. Similar findings were also found in other studies.[8, 9,10]

As hypothesized in this study, consumer durables had a significant positive influence on utilization of MHCS. Others studies also found positive influence of MHCS with socio-economic status.[11-16] Similar to consumer durables higher utilization was also found to be positively related with higher family income which is also consistent with other studies.[8,14-18]

Women having a longer distance from home to clinic utilized less MHCS than women with shorter distance. This is similar to many other studies.[19-26] This may be because poor road conditions and congested houses can make it extremely difficult for women to reach even relatively nearby facilities. In a study conducted in Tanzania, it was found that women who gave birth at home actually intended to deliver at a health facility but could not do so due to distance and lack of transportation.[27]

Table-2: *The determinants of utilization of maternal health care services in slum areas*

Variables	Unstandardized Coefficients		Standardized Coefficients	T	R Square
	B	Std. Error	Beta	Values	Change
(Constant)	1.221	.277		4.412***	
Order of Last Birth	-.347	.044	-.369	-7.803***	.152
Consumerable Goods	.076	.030	.123	2.564*	.075
Respondent's Autonomy	.140	.030	.173	4.676***	.059
Distance between Home and Clinic	-.104	.021	-.187	-4.910***	.030
Mean School	.022	.006	.148	3.620***	.022
Male Participation	.116	.034	.123	3.420**	.014
Monthly Family Income	.000	.000	.370	3.931***	.010
Husband's Monthly Income	.000	.000	.275	3.114**	.010
Mass Media Exposure	.005	.002	.106	2.636**	.007
Respondent's Attitude	.066	.025	.099	2.644**	.007
Respondent's age at last birth	.025	.011	.107	2.235*	.006

*Multiple R=0.627; R Square=0.393; Adjusted R Square=0.380; F-Value=31.035***
*df=11 and 528 ; ***P<0.001, **P<0.01 and *P<0.05*

Women who had higher schooling were more likely to utilize maternal health care services. Education of husband and in-laws also provide knowledge based surroundings by which women may exercise the freedom and autonomy towards reproductive choices and practices.

Mass media increases awareness about innovations, and fosters inter-personnel communication, which could facilitate behavioural changes allowing for the adoption of new/different behaviours.[28-29] Consistently, mass media exposure had significant positive impact on maternal health care services utilization. Women with higher positive attitude towards maternal health care services were found to utilize MHCS more than that of women with negative attitude. This may be because positive attitude diverts them from traditional way of care seeking such as from traditional birth attendant and/or relatives. Women who gave birth at higher ages were found to utilize MHCS more compared to women with lower age at last birth. Most probably this was because the former group were more experienced on complications due to pregnancy and were more inclined to seek service from health professional.

Conclusion

The reduction of maternal and child mortality and morbidity mostly depends on the utilization of maternal health care services from pregnancy to after 42 days of delivery. However, the utilization of such care services was not satisfactory among women in slum areas of Dhaka city. With differing socio-economic and demographic characteristics of women the variation in utilization of such care was found. Thus, it may be concluded that such determinants in regard to increase in the utilization of MHCS and reducing maternal and child mortality and morbidity may be very crucial.

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