

Socio-Demographical Causes behind Increasing Dependency on Caesarean Delivery: A Case Study on Literate Working Women Living in Dhaka City

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ABSTRACT

Caesarean section (CS) is well-known for being the most frequent solution for critical labor difficulties. However, Bangladesh is seeing a sharp rise in the CS deliveries beyond the standard rate, especially among literate working women. For the investigation, 600 mothers who are literate working women living in Dhaka, aged 15 to 49, were surveyed and interviewed. Delivery of CS was thought of as an outcome variable. Statistical studies using both bivariate and multiple variables were conducted. In order to determine the overall impact of independent factors on the outcome variable, logistic regression analysis was conducted. The odds of experiencing a CS delivery were 12.16 times greater for women who were older compared with those who were younger. Compared to a normal gestation time, a shorter gestation period raised the likelihood of CS 1.6 folds. Livebirth sequence was negatively related to CS delivery, and first-time mothers had odds of having CS delivery that were 5.1 times higher. Around 55% of the mother respondents used modern contraceptives while only 18.19% of pregnancies were reported as unwanted. Due to being literate and empowered, no respondents were found who took ANC less than 4 times.

Keywords: Caesarean Section, Vaginal Delivery, Pain, Fear

1.0 INTRODUCTION

1.1 Background

It is well known that, CS can save a mother's or baby's life in critical conditions when vaginal delivery is not possible (Miaa, et al., 2019). The WHO recommends that CS rates be kept within the range of 5–15%, with rates beyond this range considered as medically inadvisable or irrational. In Bangladesh, frequency of Caesarean sections has risen tremendously.

1.2 Problem Statement

Like with any operation, there are numerous risk factors involved in caesarean sections which may endure for years after the birth and affect the health of the mother, her child, and future pregnancies. Women who have less access to comprehensive obstetric care are more at risk. The increasing rate of caesarian delivery is an alarming situation for Bangladesh. Hence, Proper research has not been conducted to find out the socio-demographic causes behind this increasing rate of caesarian delivery.

1.3 Objective

The objective of the investigation was to find out the socio-demographical causes behind increasing dependency on caesarian delivery.

2.0 LITERATURE REVIEW

Around the world, the term "Caesarean section" refers to the incision of the abdomen and uterus to deliver a baby during complicated pregnancy (Kumar & Sharma, 2023). It is one of the most essential surgeries for the survival of moms and kids when there are deadly problems during labour and postpartum (Ronsmans et al., 2004). Though the WHO suggests CS within 5% to 15%, most of the countries across the world exceed the limit (WHO, 2015).

Research conducted in Narsingdi area of Bangladesh in 2015, claimed that 32.3% of all deliveries were caesarean (Islam & Yoshimura, 2015). Again, Bangladesh Demographic and Health Survey (BDHS), 2022 reported that cesarean sections accounted for in 45 percent of births over the past two years, up from 18% percent in 2011 (Mitra, 2023).

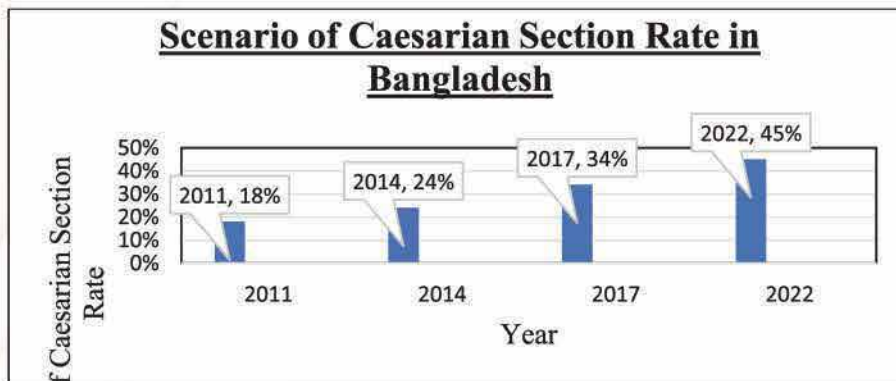


Figure 01: Scenario of Caesarian Section Rate in Bangladesh in the last ten years

Moreover, multiple investigations have revealed that increased CS application is adversely affected mom's health especially prenatal outcomes (Hannah, et al., 2000). In the last several decades, Bangladesh has achieved significant strides in mother and child health (Mitra, 2023). However, at 31 deaths for every 100,000 under 5 live births, maternal mortality is still too high (Mitra, 2023). Strategies to lower maternal mortality include expanding access to and utilization of emergency obstetric care throughout pregnancy and for difficulties associated with childbirth (Mitra, 2023).

So, it is high time we should act to minimize unnecessary CS. For that we need to find out the causes behind the current scenario. Interestingly, both medical and non-medical factors exist behind this increment. Non-medical factors include social, cultural, health care availability etc. (Gibbons, et al., 2010)

To determine the knowledge, mentality, frequency, sociodemographic predictors, and factors that influence CS delivery in Bangladesh, several studies have been undertaken (Begum, et al., 2018). According to the results of these research, CS delivery is particularly impacted by social and community variables, teenage and late pregnancy, mother education, and social and economic factors (Begum, et al., 2018).

Further studies on the downtown's most impoverished community revealed that more than 25% of all deliveries and 50% of the deliveries received expert medical support were Caesarean Section (Mia, et al., 2019). The substantial utilization of CS is strongly linked to private amenities, ANC visits, and family affluence, according to this study (Mia et al., 2019).

Another research output indicates that, in Bangladesh, caesarean deliveries had a favourable association with women's educational attainment and affluence (Kumar & Sharma, 2023). Compared to their counterparts, women who were exposed to the media, were overweight or obese, had a first-born child, had four or more prenatal care visits, and gave birth in a private medical institution were far more likely to have a caesarean section (Kumar & Sharma, 2023). According to another study on Addis Ababa, Ethiopia some of the indicators linked to caesarean sections included having complications during pregnancy, association with private medical institution, and higher education level (Tsegaye et al., 2019).

According to research conducted in southern Ghana, women between the ages of 30 and 34 had a more than twofold higher risk of having a C-section than women under the age of 20 (Manyeh et al., 2018). But compared to women under 20, those 34 and older were more than three times as likely to have a C-section. Participants with primary and junior high school education had 65 and 79% greater likelihood of undergoing a C-section, respectively (Manyeh et al., 2018). Individuals from wealthy backgrounds were almost twice as likely to give birth by caesarean section (Manyeh et al., 2018).

Another study conducted in Iran says mothers' higher levels of education, prior caesarean sections, and suggestions from physicians were the primary causes of the occurrence of caesarean sections (Rafiei et al., 2018).

Though different research has done over Bangladeshi women, it is necessary to study over literate working women of the country. Women who live in Dhaka, have minimal education and are employed should have different vision comparing to the rest. As little research can be found over this specific category, it is important to find out the socio-demographic causes behind increasing rate of CS among them.

3.0 METHODOLOGY

Data for the investigation was gathered using a quantitative approach. For the purpose of gathering data, a systematic questionnaire was created and distributed. After the response was analysed, quantifiable data was obtained.

3.1 Study Area

Dhaka City was the subject of the study.

Table 01: Details about Dhaka City

Latitude	23°45'34.56" North
Longitude	90°22'44.40" East
Total Area	306.40 square kilometer

Source: Banglapedia, 2023

3.2 Sampling Technique

The research was conducted among literate working women. Bangladesh Bureau of Statistics gave an outline about the number of working women.

Table 02: Individuals Working over 15 by Level of Schooling

Level of Education	Number of working Female (In 000)	Percentage
None	9792	45.24%
Primary	4505	20.81%
Secondary	5905	27.28%
Higher Secondary	801	3.70%
Tertiary	627	2.90%
Others	14	0.06%
Total	21644	100%

Source: BBS, 2020, BBS reported that total labor force of women is 42.68% (BBS, 2022).

3.3 Sample size & Data Analysis Method

Survey was done among 600 women aged 15 to 49 years old. Through analyzing the answers using excel the perception of women whether having child or not was determined. Then SPSS 16.0 was used to find out the significance of socio demographic characteristics among caesarian mother. The data was examined statistically using both bivariate and multivariate approaches. The chi-square test was applied in bivariate analysis to investigate the influence level between the outcome factor and the women's demographic features. Multinomial logistic regression analysis was used in multivariate analysis for evaluating the net impact of the independent factors on the outcome parameters.

4. FINDINGS

4.1 Sample Coverage

Out of 600 mothers, 529 responded to the questions. The dominating socio demographic characteristics of mother respondents were analyzed using SPSS16.0 software. Chi Square test was performed.

4.2 Chi Square Test

Chi square test was performed to find out the significance of the independent variables on dependent variable (delivery process).

Table 03: Socio Demographic Characteristics of Mother Respondents

Characteristics/ Variables	Percentage of women (%)	CS Delivery (%)	P value
Age at Birth (in years)			
15-24 years	48 (9.07%)	18 (37.5%)	0.008*
25- 29 years	313 (59.16%)	193 (61.66%)	
30 and above years	169 (31.95%)	132 (78.11%)	
Gestational Age			
< 37 weeks	228 (43.10%)	186 (81.58%)	0.006*
More than 37 weeks	301 (56.89%)	206 (68.44%)	
Livebirth Order			
1	253 (47.83%)	199 (78.66%)	0.007*
2	228 (43.10%)	131 (57.45%)	
more	48 (9.07%)	57 (25%)	
ANC visit			
1-3 times	18 (3.40%)	18 (100%)	0.430
4 times	90 (17.01%)	66 (73.33%)	
More than 4 times	421 (79.58 %)	265 (62.94%)	
Birth Control Process Used			
Oral	30 (5.67%)	30 (100%)	0.016*
Condom	241 (45.56%)	127 (52.70%)	
Mixed	54 (10.21%)	54 (100%)	
Nothing	204 (38.56%)	132 (64.71%)	
Planned Pregnancy			
Yes	433 (81.85%)	298 (68.82%)	0.265
No	96 (18.15%)	61 (63.54%)	
Facility Received during Delivery			
Public Hospital	108 (20.42%)	36 (33.33%)	0.005*
Private Hospital	421 (79.58%)	307 (72.92%)	

Source: Authors developed the table based on their field study

It demonstrated that variables such as respondents' age at delivery, gestational period, livebirth order, and delivery center had a high relevance (99% significant) on the rise in caesarian sections. Additionally, the respondents' usage of a method of contraception before to pregnancy was determined to be significant (95% significant). On the other hand, while almost everyone (96.60%) had minimum antenatal care (at least four times), the literate working women's antenatal care did not significantly influence the delivery system. Whether the pregnancy was planned or not didn't have any significant value.

4.3 Multivariable Analysis

Multinomial regression method was used for this purpose. The Chi-Square statistics were used to evaluate the model fitness. Chi-square analysis resulted in a 60.346 values and p value less than 0.05. This demonstrates that the dependent variable and independent variable had a meaningful relationship. The variables that proved their significance in chi square test were taken as independent variable for this method.

Table 04: Factors associated with CS

Variables	B	Std Error	Wald	df	P Value	Exp (B)	95% Confidence Interval for Exp	
							Lower Bound	Upper bound
intercept	16.51	1.52	118.48	1	0.0001	-	-	-
Age at Birth (in years)								
15-24 years	-5.12	1.79	8.23	1	0.004	0.006	0.0001	0.197
25- 29 years	-2.61	0.99	6.90	1	0.009	0.073	0.010	0.515
30 and above years	-	-	-	0	-	-	-	-
Gestational Age								
< 37 weeks	20.12	1.05	364.757	1	0.0001	5.47	6.94	4.32
More than 37 weeks	17.34	0.0001		1		3.40	3.40	3.42
Livebirth Order								
1	4.17	1.43	8.53	1	0.003	64.67	3.94	1058.11
2	2.54	1.38	3.39	1	0.066	12.64	0.85	188.38
more	-	-	-	0	-	-	-	-

Birth Control Process Used

Oral	15.01	2252.8	0.0001	1	0.995	3.31	0.0001	0.549
Condom	-2.44	0.936	6.766	1	0.009	0.088	0.014	
Mixed	12.92	1659.2	0.0001	1	0.994	4.06	0.0001	
Nothing	-	-	-	0	-	-	-	-
Facility Received during Delivery								
Public Hospital	-2.86	1.08	7.003	1	0.008	0.057	0.007	0.467
Private Hospital	-	-	-	0	-	-	-	-

Source: Authors developed the table based on their field study

Multinomial regression analysis identified age during delivery, gestational period, livebirth order and medical help source as significant influencer while it rejected the significance of birth control process used.

From Table 4, it could be concluded that, if the age of respondents increased, the probability or odds of caesarian section would also increase. In this case, for age 15 to 24 years and 25 to 29 years, age increment of 1 unit, increased the probability of decreasing caesarian section up to 0.006 and 0.073 respectively. Again, in the matter of 1 unit increment of gestational period less than 37 weeks (5.47) increased the probability of CS more than the gestational period within 37 to 40 weeks (3.39). Another finding about livebirth order was that first child had a higher (3.94 per unit increment) probability of facing CS. Moreover, public medical help reduced (0.057 per unit increment) the chances of CS.

The odds of experiencing a CS delivery were 12.16 times greater for women who were older (0.073/0.006 per unit) compared with those who were younger. Compared to a normal gestation time, a shorter gestation period raised the likelihood of CS 1.6 folds (5.47/3.39). Livebirth sequence was negatively related to CS delivery, and first-time mothers had odds of having CS delivery that were 5.1 times higher (64.565/12.64).

5.0 CONCLUSION

For older women compared to younger women, the likelihood of having a CS delivery was 12.16 times higher. A shorter gestation period increased the probability of CS 1.6 times over a typical gestation period. First-time moms had chances of having CS delivery that were 5.1 times greater, and livebirth sequence was inversely connected to CS delivery. Only 18.19% of the mother responders who used contemporary contraception had an unintended pregnancy, compared to over 55% of those who did. No respondents were

discovered who had taken ANC less than four times due to their schooling and sense of autonomy. The findings of the investigation indicate that the government ought to take action by developing specialized programs and raising awareness regarding the negative impacts of caesarean deliveries even among the literate working women in Bangladesh.

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