Estimating the effects of women's autonomy on obstetric care utilization in Bangladesh using instrumental variable approach: Evidence from a national survey

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Introduction

- In 2000, it was estimated that about half a million mothers die every year due to causes related to pregnancy and childbirth (Ronsmans et al., 2006).
- Curbing maternal mortality by three-quarter of the 1990 level in developing countries was given highest priority in the Millennium Development Goals set by United Nations in 2000.
- With United Nations' (UN) adoption of Millennium Development Goal 5 (MDG-5), led to reinvigorated efforts in international and national levels which in turn helped reduce the level of Maternal Mortality Ratio (MMR) worldwide by 47% from the 1990 level. WHO et al., 2014).
- Despite UN's significant efforts, 289,000 maternal deaths occurred in 2013 and Sub-Saharan Africa and South Asia regions lead the world in MMR with 510 and 190 deaths per 100,000 live births respectively (WHO et al., 2014).
- Not unlike other poor developing countries of the world, maternal mortality is a significant developmental concern for Bangladesh.
- Bangladesh Demographic and Health Survey 2011 (BDHS 2011) reports that in the last three years preceding the survey one in every four mothers (26 percent) received 4 ANCs, 29 percent of all births took place at a health facility and 27 percent of women received postnatal care (PNC) from a medically-trained provider within two days of the delivery (NIPORT et al., 2013).
- Despite the impressive progress, maternal mortality remains at an unacceptably high rate.
- Decision making capacity and its execution reside in the heart of the concept of women's autonomy, which usually constitutes both decision making and execution of those decisions.
- Women's autonomy in household decision making is not remarkable in Bangladesh. Only 42% married women participate in the four household decision making processes regarding their own health care, child health care, major household purchases and visit to their family and relatives, while 19% do not participate in any of these (NIPORT et al., 2013).

Objectives

1. To assess the level of obstetric care use in Bangladesh.
2. To assess the level of autonomy prevailing among the women in Bangladesh.
3. To analyze the impact of women's autonomy on obstetric care use in Bangladesh.

Methods

- This study employs secondary analysis of BDHS 2011 dataset which was published in January 2013
- BDHS is a nationally representative survey conducted periodically and in 2011 it was the sixth edition of the survey in Bangladesh. BDHS 2011 sample was drawn from all over Bangladesh.
- It follows a multi-stage stratified cluster sampling method and randomly selected 600 clusters (393from rural and 207 from urban strata).
- Our study consisted of information on 8,753 women who gave birth in last five years contained in the dataset.
- The dependent variable in this study was WHO recommended least number of antenatal care check-ups attended by the women during their last pregnancy, place of delivery and availing post natal care within 42 days of delivery.
- The autonomy variables in the data set are related to decision-making on their own health, on children's health, on major household purchases and visiting family and relatives.
- Principal component analysis (PCA) was performed among these four variables representing 'women's autonomy index'.
- Our principal predictor variable, women's autonomy suffers from the problem of endogeneity. We used instrumental variable (IV) approach to avoid this problem.
- Girls' school distance was our chosen IV.
- Ivprobit models were fitted for each of the obstetric cares using STATA 13.1.

Results

- Average age of the respondents was 25.57, while their husbands' mean age was 34.58 years.
- Mean years of schooling of the women (5.50) was slightly higher than the mean years of schooling of their husbands (5.30).
- The women under the study had 2.3 living children on an average.
- Standard ante-natal care (ANC) utilization, institutional delivery and post-natal care (PNC) utilization were lower among women with no formal education, of Islamic faith, from poorest wealth quintile, and who had lower autonomy scores.
- Marginal effect analysis after IV probit estimation showed that women's autonomy (Mean: 0.0001; SE: 1.69) significantly increased ANC (0.20), institutional delivery (0.20) and PNC utilization (0.15) for each unit increase of women's autonomy index (Table 1).

Table 1: Marginal Effects of Women's Autonomy on Obstetric Care Utilization, Bangladesh 2011

Variables	ANC Utilization	Place of Delivery	PNC Utilization
Respondent's Age	-0.010***	-0.008*	-0.004
Respondent's Education	0.004	0.002	0.014**
Husband's Age	0.001	0.002**	0.001
Husband's Education	0.005**	0.006***	0.008***
Number of living children	-0.023*	-0.032**	-0.02*
Religion (Ref.=Non-Muslim)			
Muslim	-0.053**	-0.067***	-0.07***
Wealth Quintile (Ref.=Poorest)			
Poorer	0.028	0.026	0.02
Middle	0.067***	0.075***	0.06**
Richer	0.089***	0.119***	0.15***
Richest	0.164***	0.165***	0.24***
Road Type (Ref.= All weather road)			
Seasonal	-0.035**	-0.012	-0.013
Waterway	-0.126***	-0.134***	-0.186***
Other	-0.050	0.005	0.043
Women's Autonomy Index	0.202***	0.201***	0.145***

Conclusion

- This study finds a significant relationship between higher women's autonomy and higher ANC, institutional delivery, and PNC utilization like other studies in Bangladesh.
- Adoption of the IV approach corrected for the endogenous nature of women's autonomy and therefore, the estimates are likely to be unbiased and consistent.
- The econometric approach of estimating the effect of women's autonomy on the utilization of three types of pregnancy care must consider the effect of age, education and wealth on women's autonomy as well as on health care utilization.
- improving women's autonomy will be an effective policy approach to increase the utilization of reproductive health services,.
- Policies can be adopted to increase women's education by removing barriers to access to education (Cleland et al., 1996).
- Health promotion among the elderly women can bring positive results.

References

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