When women return to their natal homes to deliver: Impact on healthcare seeking and health outcomes

Presentation #1008

Atique Iqbal Chowdhury[1], Asraful Alam[1], Abu Bakkar Siddique[1], Mamunur Rashid[1], Kyu Han Lee[2], Sanwarul Bari[1], Qazi Sadequr Rahman[1], Abu Mohammed Naser[3], Argeseanu Solveig[3], Shams El Arifeen[1], Emily S. Gurley[2]

[1] icddr,b Bangladesh, [2] Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health, USA, [3] Hubert Department of Global Health, Rollins School of Public Health, Emory University, USA

Introduction

Past studies suggest that improved care during pregnancy can significantly improve the health outcomes of both mothers and children [1-4]. Furthermore, pregnant women require physical and psychological stress relief during pregnancies [3, 5] for the proper development of the fetus and preparing the mother's body for the strenuous delivery process [6].

In rural Bangladesh, pregnant women rarely receive the adequate care and support required for safe pregnancy and reducing the risk of perinatal morbidity and mortality.

As a coping mechanism, pregnant women in rural areas often migrate to their natal homes to give birth because of the increased social support and improved quality of care provided by their extended families. This research attempted to understand this migration and answer two specific questions:

1) Is there any sociodemographic difference between pregnant women migrating to their natal homes with those who did not migrate?

2) Are there any differences in the health care utilization pattern and pregnancy outcomes between pregnant women migrating to their natal homes with those who did not migrate?

Study Setting

Fig 1: CHAMPS DSS Area, Baliakandi, Rajbari District, Bangladesh

Child Health and Mortality Prevention Surveillance (CHAMPS) is a multi-country project that aims to better identify and understand the causes of under-5 death in the countries of Sub-Saharan Africa and South Asia.

The CHAMPS-Bangladesh site has established a GIS-based Demographic Surveillance System (DSS) in the Baliakandi sub-district of the Rajbari district in Bangladesh (Fig 1). Through DSS, demographic and health-related (such as delivery and birth outcomes) information is collected and updated at regular intervals.

For this study, pregnancy outcomes in 2019 were extracted from the CHAMPS DSS database and used to identify pregnant women migrating to their natal homes for delivery.

Methods

- The differences between women who did not migrate with those who migrated to natal homes were analyzed using Chi-Square (χ^2) and t-tests.
- Logistic regression models were used to examine the relationship between the outcome and exposure variables. The variables used in the regression models are:

1) Outcome variables: ANC, PNC, Delivery place, Delivery attendant, Delivery type, Delivery outcome result, Neonatal death

2) Exposure variables: Migration status (migrant vs. non-migrant), Age, Education, Religion, Birth outcome order, Wealth quintile, ANC status and Number of ANC received. The migration status was the primary exposure, while the other variables were adjusted as potential confounders.

The regressions were conducted in a step-wise manner and only the exposure variables having $p < 0.15$ in single variable regressions were adjusted in the final models.

Results

- In 2019, out of 4991 pregnancy outcomes in Baliakandi, 14% of outcomes took place at mothers' natal homes (Table 1).
- Compared to pregnant women who did not migrate to their natal homes for delivery, the temporary migrants were younger and more educated.
- The average parity (mean 1.4, SD ± 0.7) of temporary migrants was lower than that of women who remained in Baliakandi (mean 2.4, SD ± 1.3).
- Temporary migrants were more likely to give birth at a health facility and have a skilled birth assistant.
- Temporary migrants were more likely to receive 4 or more ANC visits and a postnatal medical check-up.
- Fig 2 and 3 show that the temporary migrants had fewer neonatal deaths (AOR: 0.4, 95%CI: 0.2-0.8) and miscarriages (AOR: 0.4, 95%CI: 0.3-0.6) compared to women who remained in Baliakandi.
- We found no association between stillbirth and temporary migration (Fig 4) in this study (AOR: 0.7, 95%CI: 0.3-1.4).

Table 1: Distribution of socio-demographic variables, health care pattern and pregnancy outcomes between migrating women and those who do not migrate

	Did not migrate (N=4289)		Migrate to natal home (N=702)		Total (N=4991)		P value
	n	%	n	%	n	%	
Migration	4289	85.9	702	14.1	4991		
Mean Age (SD)	25.4 (±6.0)		21.3 (±4.1)				<0.0001
Mean Education (SD)	7.5 (±3.2)		9.3 (±2.9)				<0.0001
Religion							
Muslim	3757	87.6	585	83.3	4342	87	0.002
Hindu & others	532	12.4	117	16.7	649	13	
Mean Birth outcome order (SD)	2.4 (±1.3)		1.4 (±0.7)				<0.0001
Mean wealth score (SD)	-0.1 (±2.2)		0.3 (±2.5)				<0.0001
Facility delivery[a]							
No	1679	39.2	151	21.5	1830	36.7	<0.0001
Yes	2609	60.8	551	78.5	3160	63.3	
Delivery with SBA							
No	1481	34.5	116	16.5	1597	32.0	<0.0001
Yes	2808	65.5	586	83.5	3394	68.0	
Received any ANC[b]							
No	826	22.9	104	16.0	930	21.9	<0.0001
Yes	2773	77.1	547	84.0	3320	78.1	
Received 4 or more ANCs							
No	2567	71.3	389	59.8	2956	69.6	<0.0001
Yes	1032	28.7	262	40.2	1294	30.4	
Received any PNC[c]							
No	1924	53.4	221	34.0	2145	50.4	<0.0001
Yes	1679	46.6	429	66.0	2108	49.6	
Outcome type[d]							
Normal delivery	2036	54.8	249	37.4	2285	52.2	<0.0001
Cesarean delivery	1677	45.2	417	62.6	2094	47.8	
Stillbirth							
No	3632	97.6	657	98.7	4289	97.7	0.082
Yes	91	2.6	9	1.3	100	2.3	
Miscarriage							
No	3723	86.8	666	94.9	4389	87.9	<0.0001
Yes	566	13.2	36	5.1	602	12.1	
Neonatal death							
No	3506	96.5	644	98.0	4150	96.8	0.047
Yes	126	3.5	13	2.0	139	3.2	
Neonatal death category							
0 to 6 days	112	3.1	12	1.8	124	2.9	0.578
7 to 28 days	14	0.4	1	0.2	15	0.4	

Forest plot showing adjusted odds ratios

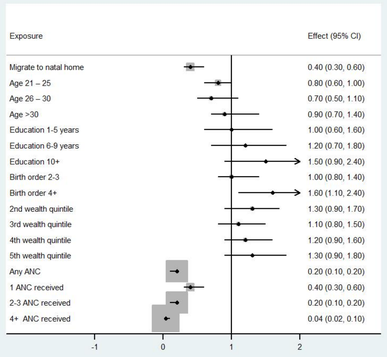

Fig 2: Forest plot showing AOR with 95%CI for miscarriages

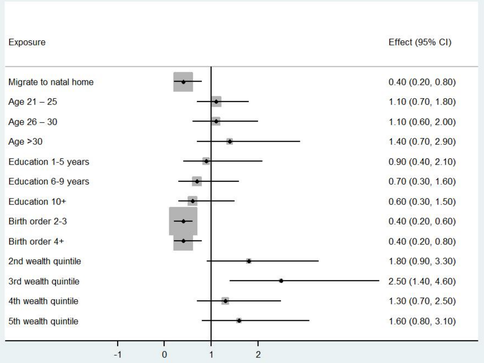

Fig 3: Forest plot showing AOR with 95%CI for neonatal death

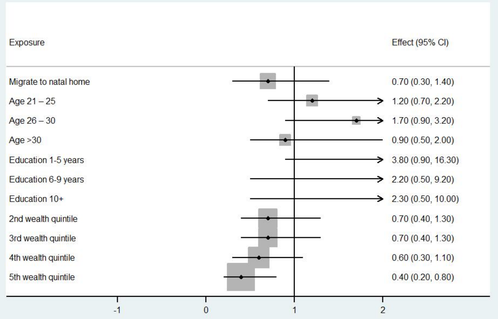

Fig 4: Forest plot showing AOR with 95%CI for stillbirth

Discussion

This study attempted to understand the sociodemographic profile of pregnant women who return to their natal home (temporary migrants) and the care they receive both during and after pregnancy, as compared to women who do not migrate and remain at their in-law's home for delivery. This migration is a tradition, specifically for first pregnancy in Bangladesh.

Our results indicate that women's tendency to migrate to their natal homes is higher amongst women belonging to high wealth quintiles (forth and highest), which is consistent with past studies suggesting that the financial conditions of the households strongly influence women's decision to undertake various health beneficial decisions [7, 8]. Also, these women were more educated and younger, highlighting the importance of education in strengthening women's decision-making power in rural settings.

Although at the 10% significance level, stillbirth was found to be lower for women migrating to their natal homes, the association between stillbirth and temporary migration was insignificant in the regression model.

The findings suggest that temporary migrant women have a considerably lower likelihood of miscarriages and lower odds of neonatal death. We believe that these observed differences are due to social support and improved quality of care provided at their natal homes compared to their in-law's place [2, 3]. However, further study is warranted to confirm this hypothesis.

Limitations

Several improvements to our study are possible.

1) Incorporating multi-year data can help improve the statistical significance of our obtained results, such as the association between stillbirth and temporary migration.
2) We employed a linear logistic model for assessing the association between outcome and exposure variables. In real-life, the relationship might not be so straightforward linear. The application of non-linear models may help obtain a better picture of real-life.

Conclusion

1. The study highlighted the stark differences between women delivering in their natal homes with women who delivered at their in-law's home.
2. Pregnant women who visited natal homes were younger, more educated and belonged to households in upper wealth quintiles. They also had significantly lower miscarriages and neonatal deaths.
3. This study created the primary knowledge base for future studies to explore the differential treatment that women receive at their in-law's place and its subsequent impacts on their health outcomes.

References

1. Chowdhury, A.I., et al., *Analyzing spatial and space-time clustering of facility-based deliveries in Bangladesh.* Tropical medicine and health, 2019. **47**(1): p. 44.
2. Sigalla, G.N., D. Mushi, and T. Gammeltoft, *"Staying for the children": The role of natal relatives in supporting women experiencing intimate partner violence during pregnancy in northern Tanzania–A qualitative study.* PLoS one, 2018. **13**(6): p. e0198098.
3. WHO, *Counselling for maternal and newborn health care: A handbook for building skills*. 2010: World Health Organization.
4. Liang, B., et al., *A theoretical framework for understanding help-seeking processes among survivors of intimate partner violence.* American journal of community psychology, 2005. **36**(1-2): p. 71-84.
5. Ministry of Health and Family Welfare, G.o.t.P.s.R.o.B., *National Neonatal Health Strategy and Guidelines for Bangladesh*. 2009: Bangladesh.
6. González-Ochoa, R., et al., *Evaluating stress during pregnancy: Do we have the right conceptions and the correct tools to assess it?* Journal of pregnancy, 2018. **2018**.
7. Saeed, B., et al., *Effect of socio-economic factors in utilization of different healthcare services among older adult men and women in Ghana.* BMC Health Services Research, 2016. **16**(1): p. 390.
8. Akhter, S., G.L. Dasvarma, and U. Saikia, *Reluctance of women of lower socio-economic status to use maternal healthcare services–Does only cost matter?* PloS one, 2020. **15**(9): p. e0239597.

Md. Atique Iqbal Chowdhury
atiquei@icddrb.org

CHAMPS

See more data at champshealth.org