

Watch Report

Report No. 9

Research and Evaluation Division, BRAC

October 1994

Tetanus Toxoid Coverage During Pregnancy: Evidence from Rural Bangladesh

Introduction

The tetanus toxoid (TT) immunization to all women of child bearing age particularly during pregnancy has found to be the most convenient and cost-effective public health intervention for tetanus mortality reduction among both mothers and children (Koenig et al, 1991; Foster, 1984). The government, along with the NGOs, has been trying to provide TT immunization to all women of child bearing age since 1985. Although immunization program has focused primarily on children, the national TT acceptance has gradually been increasing from a very low state in 1985 to nearly 74% in 1990. The complete coverage of TT has reached to 80% in January 1994 (EPI, 1994).

The coverage, however, is not uniform across the demographic and socioeconomic categories. This report looks at the individual, household and geographical differences in TT coverage.

Data and Methods

The data, presented in this report, come from *Watch*, the development monitoring system that BRAC has been

operating since 1986 in 150 villages, located in four thanas of the country. The detail description of *Watch* has been reported elsewhere (Hadi, 1994). The *Watch* has developed a very reliable birth registration system where the component of TT immunization during pregnancy was added in January 1993. The TT information of the mother of all children born in the study area in calendar year of 1993 (live or dead) have been used in this report. A total of 2,053 births has been recorded in 1993. The quality of data has been assured by verifying each record by external monitors and corrected as necessary.

Major Findings

Of the recorded births occurred in 1993, nearly 77% of women were found immunized from tetanus during their pregnancy (Table 1). The geographical distribution in coverage shows a wide variation where the complete coverage has been significantly higher in the North (84.9%) than the central (70.3%) area ($P < .01$). The *National Coverage Evaluation Survey*, conducted in January 1994, also shows similar estimates (83% in Rajshahi division ie, north and 78% in Dhaka division ie, central) (EPI, 1994). The table also

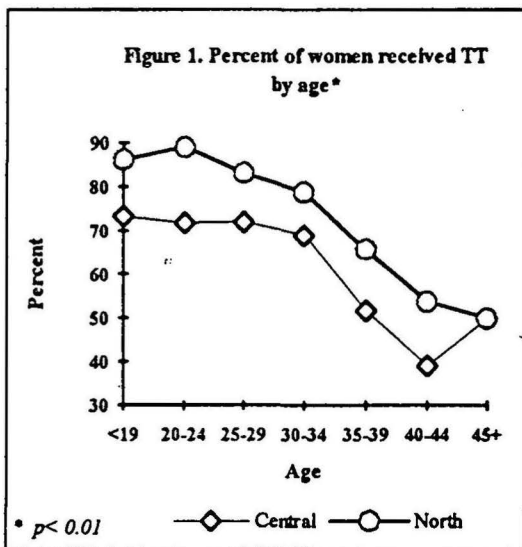
indicates that more than 10% of pregnant women have dropped out after getting the first dose ie, partially immunized from tetanus. The drop out rate has been found higher in the central than the northern area.

Table 1. TT coverage by study area

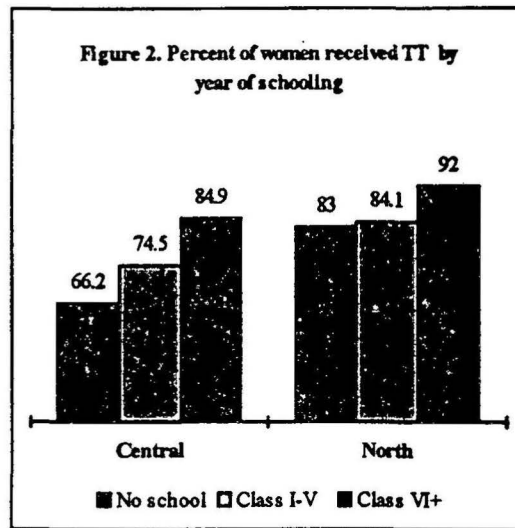
Area	Coverage*		
	None	Partial	Complete
Central	19.0	10.7	70.3
North	5.8	9.3	84.9
All	13.2	10.1	76.8
N	352	269	2053

* Significant at $p < 0.01$

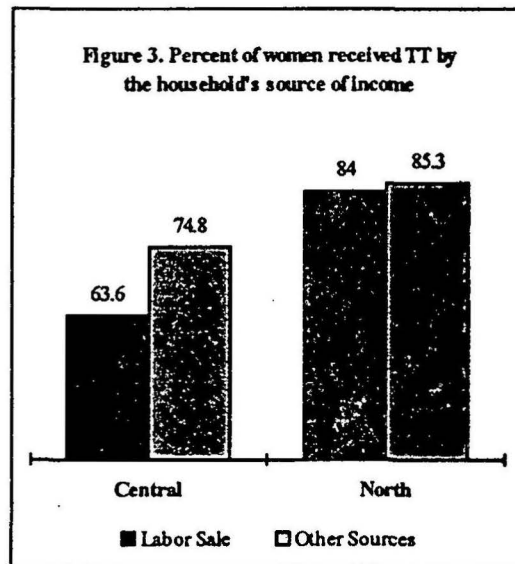
The TT coverage varies with age of women (Figure 1). The younger women are found more likely to be immunized than older women. The figure shows that the coverage drops sharply after age 35 years.



The immunization among pregnant women has a direct relationship with her year of schooling (Figure 2). The difference in coverage by education has found more pronounced in the central (P<.01) than the northern area.



Like year of schooling of women, primary source of income of her household has also been found as an important predictor of the acceptance of TT during pregnancy (Figure 3). Although the difference is not statistically significant in the North, the TT coverage in the central area has found much lower in the labor households (63.6%) compared to others (74.8%).



The ownership of cultivable land shows two distinct patterns in two areas (Figure 4). What emerges is that the pregnant women of large land owning (2+ acres) households have been better protected from tetanus than others. The

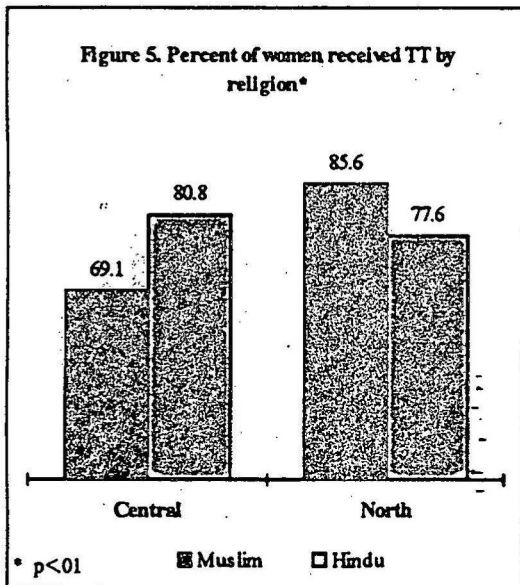
TT coverage among women of landless and marginal farmers appears to vary by area where year of schooling, religion and source of income may have important role to play.

Table 2. TT coverage by ownership of land

Land	Study Area	
	Central	
North		
Landless	68.9	83.9
1 - 199 dec	67.0	85.5
200 + dec	81.0	85.0

Significance: Central: $p < .01$

As have seen in Figure 5, the TT coverage among Muslims (80.8%) has been much higher than the Hindus (69.1%) in the central area ($P < .01$) while just reversed in the North. The reason of such variation in coverage by religious belief is not precisely known which needs to be investigated further.



Those women who did not receive full doses of TT (ie, women not or partially immunized) were asked about the reason of non-acceptance of TT. The distribution of their responses, presented in Table 3, indicates that a significant

proportion of women has not been fully covered due to such reasons as the TT services were not provided and the health worker failed to identify the eligible women at the appropriate time during pregnancy. The other major reported reasons of non-acceptance of TT have been the ignorance and the departure of women from their usual home in preference of confinement in their parents' house during the third trimester of pregnancy. Fear and rumours, due to lack of experience with injections during pregnancy have also been reported as important reasons of non-acceptance of TT.

The findings of this report present a picture of the immunization status ie, the proportion of neonates and their mother during pregnancy have been protected from tetanus in 1993. The analysis also indicates that both individual and socioeconomic variations among women as well as geographical difference have profound influence on the TT coverage during pregnancy. The report also suggests that still there is room to improve the TT coverage by focussing on the reduction of programmatic non-acceptance of tetanus toxoid during pregnancy.

Table 3. Reasons of non-acceptance of (TT) during pregnancy

Reasons	Study Area*	
	Central	
North		
Program related		
Services discontinued	12.5	26.3
Late when identified	15.9	17.3
Client related		
Objection from in-laws	2.7	3.6
Fear-Rumour	13.1	7.3
Did not know	14.3	19.1
Lethargy	16.5	1.8
Moved to other place	12.5	16.4
Other reasons	12.5	8.2

* Significant at $p < .01$

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Koenig, MA, Khan MA, Wojtyniak, B et al., 1991: "Measles vaccination reduces childhood mortality in rural Bangladesh". In Huq, M (ed), *Near Miracle in Bangladesh*. Dhaka: University Press Limited.

This report has been prepared by Abdullahel Hadi of the Research and Evaluation Division of BRAC in October 1994.