

TT Vaccination Status of Pregnant Women in Rural Bangladesh

Reshma Akter^{1*} Samiha Kaisar² Mahmuda Islam Bonna¹

Ruma Parvin³ Sharmin Mostafa⁴

ABSTRACT

Background: Tetanus Toxoid (TT) is a substance that is derived from the toxin released by bacterium that causes the disease tetanus. It is used as a vaccine to prevent tetanus or to help boost the immune response to other vaccines. This study aimed to evaluate pregnant women's knowledge and immunization status regarding Tetanus Toxoid (TT) vaccination in rural Bangladesh.

Materials and methods: A cross-sectional survey was conducted among 53 conveniently selected respondents using a mixed-type questionnaire.

Results: The study found that 94.34% of the respondents had knowledge about TT vaccination, but only 56.6% had received the vaccine. Of those who received the vaccine, only 10% completed five doses of TT vaccination, and 63% received three doses. The study revealed that TT vaccination coverage was higher in the upper class and lower in very poor families.

Conclusion: The study concludes that the TT vaccination status is not satisfactory, more efforts are needed to improve vaccination coverage. Government, non-governmental organizations, donor agencies and the mass media can play a significant role in raising awareness and improving healthcare delivery.

Key words: Pregnant women; Tetanus toxoid; Vaccine.

Introduction

Women of reproductive age (15-44 years) are given Tetanus Toxoid (TT) to protect them from tetanus and their newborn children from neonatal tetanus. A serious illness called neonatal tetanus is brought on by a bacterial pathogen that is typically transferred during unsanitary childbirth. For lifetime tetanus protection, a woman requires a total of 5 TT doses, all of which must be given in accordance with the WHO's recommended schedule. A woman needs at least two doses of the TT vaccine (TT1 and TT2) because one dosage of the TT vaccine does not provide any protection. Females are

more susceptible to the tetanus virus, particularly during risky home deliveries or abortions performed by inexperienced birth attendants, and they also experience puerperal tetanus.¹ Tetanus is a sickness that is avoidable. Unless previously protected by a vaccine, no age is immune. As the levels of the toxin that causes tetanus in humans do not trigger a protective response, patients who have recovered from the condition must be actively immunized.²⁻⁵

Materials and methods

A cross sectional study was conducted on TT vaccination status of pregnant women in Gabura union of Shamnagar, Satkhira, Bangladesh from January 2023 to March 2023. A total number of 53 respondents of pregnant women were included. A pretested mixed type of questionnaire was used to collect and record the necessary information. After collection data were verified, edited for its consistency. The data were compiled, tabulated and processed in the computer according to the key variables. Data were processed and analyzed manually and by computer, were presented by bar diagram and pie chart.

1. Intern Doctor
 Khulna City Medical College, Khulna.
2. District Quality Improvement Coach
 National Institute of Preventive and Social Medicine, Dhaka.
3. Curator of Pathology
 Khulna Medical College, Khulna.
4. Assistant Professor of Community Medicine
 Ad-din Akij Medical College, Khulna.
- *Correspondence : **Dr. Reshma Akter**
 Cell : +88 01724 80 03 21
 Email : ayshareshma262@gmail.com

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Results

Table I Distribution of respondents according to their ages

Age (Year)	Frequency	Percentage (%)
20-24	23	43.40
25-29	15	28.30
30-34	8	15.09
35-39	7	13.21
Total	53	100.00

This Table showed that the mean age of the respondents was 26.90 (SD±5.32). 43.39% of respondents were from the 20-24 years age group.

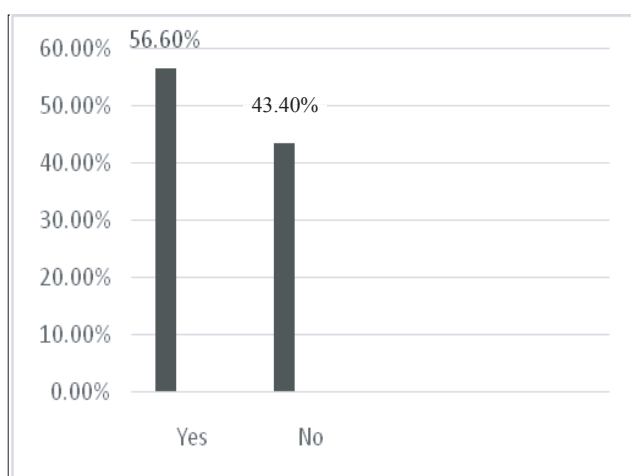


Figure 1 TT vaccination coverage

Above diagram shows that 30 (56.60%) respondents had received TT vaccine 23 (43.40%) not vaccinated by TT dose.

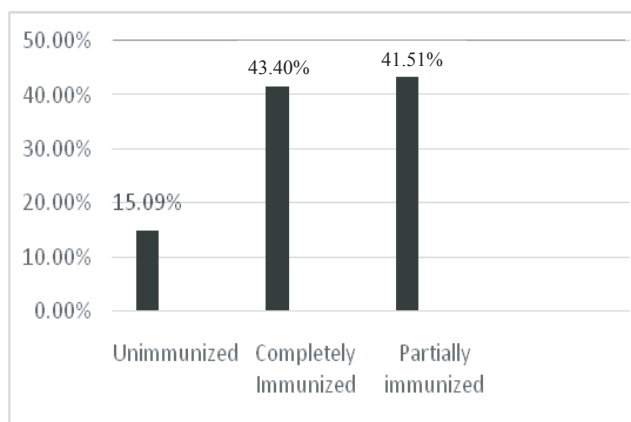


Figure 2 Immunization status of the respondents

Above diagram shows that only 23 (43.4%) respondents were completely immunized, whereas 8 (15.09%) of the respondents were unimmunized.

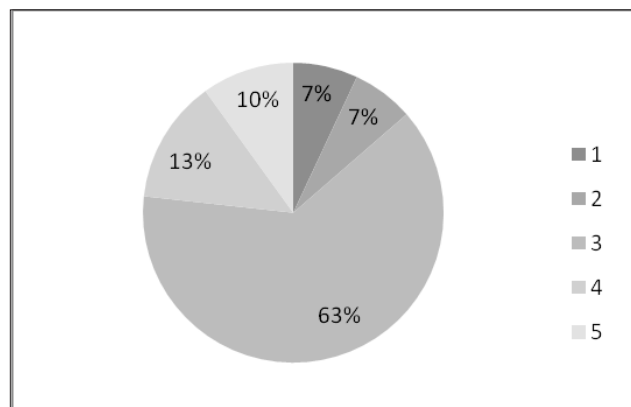


Figure 3 Respondents according to number of completed doses

The pie diagram shows that among 30 respondents only 3 (10%) of the respondents completed five doses of TT vaccination and only 19 (63%) respondents received 3 dose of TT vaccine.

Table II TT vaccination coverage according to socioeconomic status

Economic status	Frequency	Percentage (%)
Very poor	2	6.67
Poor	4	13.33
Lower middle class	4	13.33
Middle class	20	66.67
Total	30	100.00

It was revealed that TT vaccination coverage was maximum 66.67% in middle class and only 6.67% in very poor family.

Table III Immunized respondents according to educational status

Educational status	Frequency	Percentage (%)
Primary	4	13.33
Secondary	8	26.67
SSC	18	60.00
Total	30	100.00

It was found that among 30 respondents who received TT vaccine, 60% respondents completed secondary education, only 13.33% have studied up to primary school.

Discussion

Among the total 53 respondents majority 43.4% were in the age group of 20-24 years. Only 49.06% respondents had completed primary education. 43.39% respondents belonged to lower middle class family. 94.34% respondents had knowledge about TT vaccination. 30 (56.60%) respondents had received TT vaccine. All these represented the findings of the survey conducted

among nurses in a tertiary hospital, Dhaka.^{6,7} Among 53 respondents, 23 (43.4%) respondents were not immunized, whereas 8 (15.09%) of the respondents were among 30 respondents only 3 (10%) of the respondents completed five doses of TT vaccination and only 19 (63%) respondents received 3 dose of TT vaccine. These findings were very close to the findings of Bangladesh Maternal Mortality and Health Care Survey in 2010 and others surveies which found 90.0% women received TT1 vaccine followed by 37.0% crude vaccination coverage and 31.0% valid vaccination coverage among the women of Chittagong hill tracts.⁸⁻¹⁰ It was revealed that TT vaccination coverage was maximum 66.67% in middle class and only 6.67% in very poor family. So, it is evident respondents from middle class family are much more conscious regarding TT vaccination. It was found that among 30 respondents who received TT vaccine, 18 (60%) respondents completed secondary education, only 13.33% had studied up to primary school.

Conclusion

Tetanus vaccine is the only method for eradicating the disease. According to our survey, the TT vaccination status is not satisfactory. However, there are still some who are completely unaware of it, and some who are aware of it but are unaware of vaccination. Some of the responders begin their immunization regimen during the early stages of their menstrual cycle or when they are pregnant, but they stop, which is very irritating.

Recommendation

Our government should be more concerned with the delivery of healthcare, and other non-governmental groups, donor agencies, and most crucially the mass media, may play a significant role in this regard.

Disclosure

All the authors declared no competing interest.

References

1. □Ferdous F, Nargis S, Roy HL, Islam E, Islam MT, Sultana M. Study on TT Vaccination Status of Female Students of Khulna. *Medicine Today*. 2019;31(2):117–119.
2. □Ferdous F, Hussain RF, Biswas SN, Haque AA, Sultana N. A Survey on Tetanus Toxoid (TT) Vaccination Status of Women of Reproductive Age (15 - 49 years) in a Rural Community of Satkhira. *KYAMC Journal*. 2019;10(2):73–76.
3. Redi T, Seid O, Bazie GW, Amsalu ET, Cherie N, Yalew M. Timely initiation of antenatal care and associated factors among pregnant women attending antenatal care in southwest Ethiopia. *Plosone*. 2022;17(8):e0273152.
4. Anatea MD, Mekonnen TH, Dachew BA. Determinants and perception of Utilization of Tetanus toxoid immunization among reproductive age women : A community based cross sectional study. *BMC*. 2018;18(1):1-10.
5. Mehanna A, Ali MH, Kharboush I. Knowledge and health beliefs of reproductive age women in Alexandria about tetanus toxoid immunization. *Journal of the Egyptian Public Health Association*. 2020;95(1):1-11.
6. □Sobhan F, Yasmeen S. Knowledge regarding Tetanus and Status of TT vaccination among nurses in a tertiary hospital, Dhaka. 2006;161.
7. World Health Organization. Protecting all against tetanus: Guide to sustaining maternal and neonatal tetanus elimination (MNTE) and broarning tetanus protection for all population. 2019.
8. □Bangladesh Maternal Mortality and Health Care Survey 2010. Public and Health Information USAID, Bangladesh. 2010.
9. Ahsan K Z, Ahmed S, Angeles G, Curtis S. Bangladesh Maternal Mortality and Health Care Survey 2016: Preliminary Report. Research Gate. Report number : TR-17-218.2017.
10. Haider MM, Siddique AB, Jabeen S, Hossain A, Khan S, Rahman MM et al. Levels, trends, Causes, place and time of care seeking for and barriers in preventing indirect maternal death in Bangladesh. An Analysis of national level household surveys. *Journal of Global Health*. 2023. DOI: 10.7189/jogh.13.04019.