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Knowledge of tetanus and tetanus toxoid immunization among women of reproductive age group in rural area, Bangladesh

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Abstract
Tetanus, commonly referred to as "lockjaw", is a serious infection caused by *Clostridium tetani*. Tetanus infection caused by bacterium Clostridium t*etani*is a non-communicable and preventable cause of morbidity and mortality among neonates. Newborns can become infected through contaminated instruments used to cut the umbilical cord or by improper handling of the umbilical stump. Globally 38,000 people died from tetanus in 2017.Neonatal tetanus is more likely to occur in low and middle income countries especially in places such as urban slums and rural areas; places unhygienic deliveries at home are common, and coverage of antenatal care services and maternal tetanus toxoid immunization are usually inadequate. This study was conducted to assess the level of knowledge on tetanus toxoid immunization among rural women of reproductive age. Study Design: Descriptive cross-sectional study was conducted at Mother and child welfare centre, Union health and family welfare center and Satellite clinic from July 2018 to Dec 2019.The study was conductedin 349 women who met the inclusion criteria by non-probability convenient sampling technique. A structured and self-administered questionnaire was used for data collection. Data was analyzed using suitable Software. Results: Only 8.88% of women enrolled in the study had knowledge about tetanus disease and tetanus toxoid vaccination. Education, family setup, and respondent's occupation status had minimal impact on their knowledge. Pregnant women were receiving adequate doses of TT vaccine (85% during their current pregnancy at the health care facility), the majority (99.71%) of them were not being educated or informed about its importance By the health care provider. Conclusion: The study concluded that although women are being immunized with tetanus toxoid vaccine during their antenatal checkup, they are not being educated about its importance for good health.

Keywords: knowledge of neonatal tetanus, tetanus toxoid vaccination, tetanus elimination

Introduction

Tetanus Toxoid (TT) is administered to women of reproductive age (15-49 years) to protect them from tetanus and their newborn babies from neonatal tetanus. Neonatal tetanus is a grave disease caused by a bacterial pathogen transmitted during the childbirth usually in an unhygienic condition. A woman needs a total of 5 TT doses for life long protection from tetanus and all the doses should be administered according to the WHO-recommended schedule. Since only one TT dose does not offer any protection, a woman needs at least two doses TT vaccine (TT1 and TT2), to get some protection during pregnancy. Females are more exposed to the risk of tetanus, especially during unsafe home delivery or abortion by untrained birth attendance and suffer from "puerperal tetanus". Neonates typically contact the disease during birth, when delivered in unhygienic conditions, especially when the umbilical cord is managed by unclean instruments and substances like ashes, soil or cow dung. Tetanus is a preventable disease. No age is immune unless protected by previous immunization. Tetanus Toxoid is highly effective and lasts for several years. Protection by TT vaccination begins 15 days after the second dose and completion of 5 doses of TT vaccination in schedules ensure immunity during whole reproductive life of the women. It is evidenced that TT vaccination coverage is still very poor along with high dropout rate in rural part of the country. This present study was designed to assess the TT vaccination coverage, dropout rate and related reasons to contribute the improvement of TT vaccination coverage among the rural women of the country. Improvement of TT vaccination coverage among the rural women of the country.

Statement of the problem

In Bangladesh two major vulnerable groups for tetanus; pregnant women and neonates reside in rural part of the country. Tetanus Toxoid is an ongoing vaccination program under EPI in Bangladesh and the target population of this program is women of reproductive age. Success of the program results decrease in mortality of bother and newborn from tetanus. Since it is difficult to ensure clean deliveries in the developing countries like Bangladesh, immunization of mother against tetanus has been a more reliable method to prevent neonatal tetanus and postpartum tetanus.

Objectives of the study

The main objectives of the researcher work are as follows:

1. To assess the level of knowledge and practice about tetanus toxoid immunization.
2. To assess the tetanus toxoid (TT) immunization coverage rate among women of reproductive age.
3. To find out the factors likely to be associated with TT vaccination coverage in women of reproductive age.

Rationale of the study

Tetanus is a preventable deadly infectious disease common among Neonates and mother. Immunization is available in EPI (Expanded Program on Immunization) at both infant

level and for females of reproductive age. Immunization of pregnant women with tetanus vaccine is one major means of controlling neonatal tetanus (NT). Poverty, poor hygiene and limited access to health services increase the risk Maternal & Neonatal tetanus. The purpose of giving the vaccine to women of child bearing age and to pregnant women is to protect them from tetanus and to protect their newborn infants against Neonatal Tetanus. High immunization coverage of pregnant women, clean delivery and the identification and implementation of corrective action in high risk areas are the three primary strategies for eliminating Maternal & Neonatal Tetanus. No age is immune unless protected by previous immunization. Tetanus Toxoid is highly effective and lasts for several years.

Methodology of the study

Study Design: It was a descriptive cross-sectional study.

Study population and Area: All those women who came for ante natal care at selected Mother and Child welfare centers, Union Health and Family welfare centers and at satellite clinic.

Sampling Technique: A purposive sampling technique was used for the study**.**

Sample size: 349respondentwere selected through purposive sampling from selected Mother and Child welfare centers, Union Health and Family welfare centers and at satellite clinic.

Data collection Procedure: Data were collected by face-to-face interview with a structured questionnaire.

Sources of data: Data were collected from primary Sources.

Data collection tools: A structured questionnaire in English was duly pre-test and used for data collection from the respondent.

Methods of data collection: Data was collected through interview method, from study participants through administered questionnaire by face to face interview.

Data processing: After entire data collection, it was computerized using suitable data entry software, such a SPSS, MS. Excel etc.

Data Analysis: Data was analyzed with the help of SPSS software program and MS. Excel.

Presentation of Findings: Findings was presented as a thesis through written research report.

Results and discussion

Sociodemographic characteristics of the respondents

As shown in Graph 1: the predominant age of the respondents was 25–29 years (32.5%) and lowest was 15-19 years (7.16%).

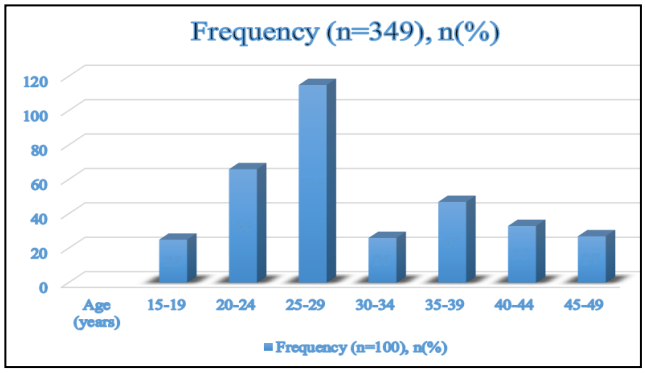

Fig 1

Mother's education

As shown in

Table 1: Respondents educational level found highest from primary group and lowest from illiterate group.

Education level	Frequency (n=100), n (%)
Illiterate or just read and write	22
Primary	125
SSC	115
HSC	57
Bachelor and above	30

Knowledge of tetanus and tetanus toxoid immunization

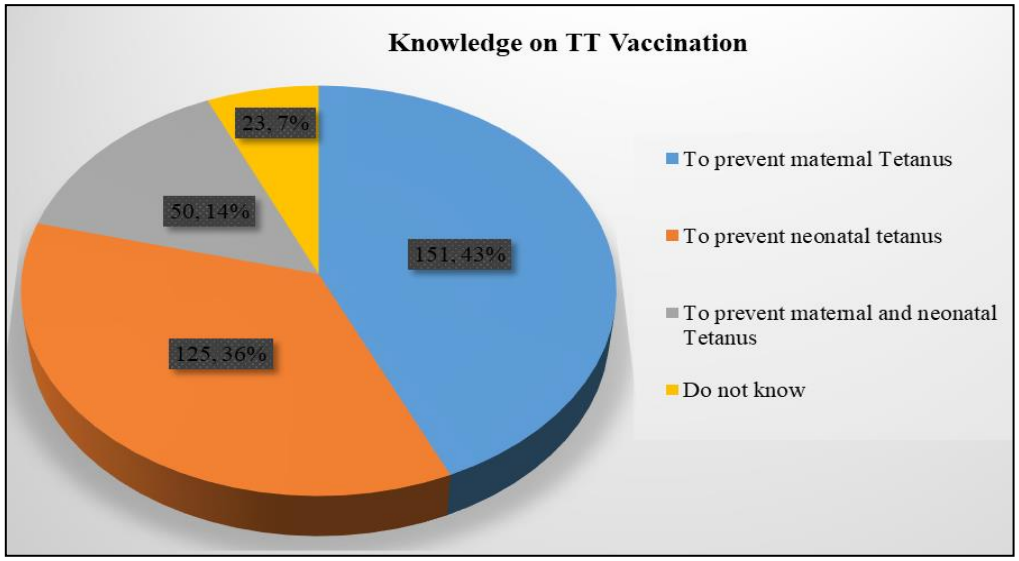

Fig 2: Number of doses of tetanus toxoid vaccine would be received by women of reproductive age

Knowledge on TT vaccination, found that 43% of respondents said that TT vaccination prevent maternal and Neonatal tetanus, 36% said it prevent neonatal tetanus and where as only 7% said they do not know.

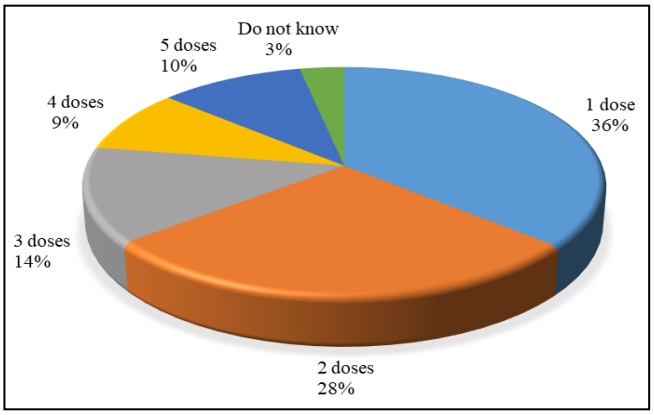

Fig 3: Number of doses of tetanus toxoid vaccine would be received by women of reproductive age

Shown that 36% of respondents said one dose followed by 28%, and only 5% respondents mentioned about 5 doses, where as only 3% said they do not know.

Information on TT Vaccination

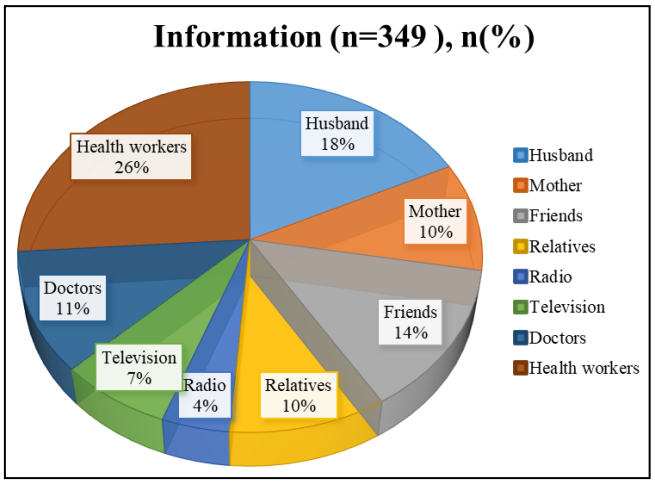

Fig 4: Source of information for TT Vaccination

Source of information, 26% heard from health workers, 24% from friends/relatives, and only 4% from radio and 7% television.

Causes of maternal and neonatal tetanus

Table 2: Respondents knowledge on causes of Tetanus

Causes	Frequency (n=349), N (%)
Cutting umbilical cord by contaminated or rusted instruments	175
Delivery or abortion in un equipped places	95
Don't know	79

Furthermore, 77.36 % of respondents had good knowledge on causes of Tetanus to mother and neonate. All respondents interviewed had adequate knowledge on where to obtain TT vaccine with majority (87.6%) indicating hospitals/clinics while 12.4% indicated satellite clinic.

Conclusion

Majority of the women had poor and inadequate knowledge regarding tetanus disease, importance of TT vaccination and full TT doses. Vaccination coverage were found average, it was concluded that most of the women had informed about the importance of TT vaccine by health care provider during their antenatal visits. The insufficient knowledge and lack of awareness about the disease could lead to demand failure in seeking health care and subsequently lead to the risk of acquiring tetanus infection in the future.

Recommendation

In order to address maternal and neonatal tetanus elimination challenge for Bangladesh, health education and health communication is an effective tool. Health education will be continue focusing on the importance of TT vaccination by using print or electronic media and creating awareness sessions by health workers and EPI vaccinators at school, community among women of reproductive age women and their families. This will not only modify health seeking behaviors among women but will also create demand generation for getting full course vaccination among women.

Limitation of Study

The study was conducted at selected few facilities and sample size was minimum. Furthermore, the study was confined to the quantitative component due to the time constraints.

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