
Original Research Article

Awareness of tetanus toxoid vaccination by pregnant women attending antenatal clinic in central hospital, Benin City

Christie Akpoigho Enuke* and Oritsegbemi Orru

Department of Nursing Science, School of Basic Medical Sciences, University of Benin, Benin City, Edo State, Nigeria

*For correspondence: Email: akpoigho@yahoo.com Tel: +2348052419497

Abstract

Purpose: Tetanus could occur during pregnancy or within six weeks after delivery. World Health Organization (WHO) introduced Tetanus Toxoid vaccine as one of the primary vaccines targeting Maternal and Neonatal Tetanus. The purpose of the study is to assess the level of awareness of tetanus toxoid (TT) vaccination during pregnancy among pregnant women attending Antenatal Clinic in Central Hospital, Benin City.

Methods: This was a cross-sectional descriptive survey involving a convenient sample of 300 pregnant women that attended antenatal clinic between 5th May and 9th June 2015. Using a close ended questionnaire, the women were asked about their biography, awareness and knowledge of vaccination schedule and number of vaccine received. Data collected were analysed using descriptive statistics.

Results: Majority 140 (47%) of the respondents were in their second trimester while 95(33%) were in their third trimester. Awareness of the TT vaccination during pregnancy was high (80% of respondents) and most respondents had good knowledge of TT 203(69%). Majority 60% of the respondents had received TT1, 22% had received TT2 and 13% had received TT3.

Conclusion: Majority of the pregnant women were aware and knowledgeable of TT vaccination and majority received at least one dose. Vigorous campaigns should be put in place in order to increase their knowledge as regards the 5 doses recommended by WHO.

Keywords: Vaccination, Tetanus Toxoid, Immunization, Pregnant Women. Knowledge and Awareness

Indexing: Index Copernicus, African Index Medicus

Introduction

Tetanus can occur during pregnancy or within six weeks after termination of pregnancy. Women who deliver under unhygienic conditions and with low tetanus toxoid (TT) vaccination are at risk of developing tetanus. Of major concern is Maternal and Neonatal Tetanus (MNT). Worldwide, it is estimated that every year 5% maternal deaths result from tetanus and 14% of all neonates die due to MNT [1]. In some African countries like Nigeria, Neonatal tetanus was found to be 24%. The goal of MNT elimination was declared jointly by the United Nations International Children's Emergency Fund (UNICEF), the World Health Organization (WHO) along with the establishment of a global fund for MNT elimination [2]. In line with this goal, the World Health Organization (WHO) recommended that women of childbearing age should commence a 5-dose regime of vaccine-

tion against tetanus as early as possible; this comprises first dose given at any time during the ages of 15-45years, a second dose four weeks later and a third dose given 6-12months after the first two doses. Additional two doses given at least one year apart further prolongs the duration of immunity against tetanus [3].

The above recommendation by UNICEF and WHO are based on the vital importance of TT to the survival of babies, especially in countries like Nigeria where the prevalence rate is still very high. According to the WHO, Nigeria is one of 30 remaining high- risk countries that are yet to achieve the Maternal and Neonatal Tetanus Elimination (MNTE) goal [4]. Available data indicate that 18 States(out of 36 and Federal Capital Territory) are at risk for Maternal and Neonatal Tetanus and many hospital based studies have identified Maternal and Neonatal

Tetanus as a problem of high magnitude in Nigeria [5]

One key strategy to increase vaccination is to focus vaccination efforts on pregnant women. Evidence has shown that vaccination is a two-for-one healthcare intervention in this group because it improves the chances of a healthy delivery while providing essential protection for babies during the first few months of life when they are too young to respond to vaccines and be fully protected. Thus the benefits of vaccinating pregnant women usually outweigh potential risks when the likelihood of disease exposure is high. It is pertinent to note that vaccination of pregnant women can prevent maternal and neonatal tetanus if these women are aware and have the knowledge of TT vaccination and receive correct doses during pregnancy. At times, some of the mothers may not be aware of the risks they and their unborn children are exposed to and the importance of the vaccination. In a study in Kenya TT coverage was independent of their knowledge [3] Clients education on importance of antenatal immunization using various methods would offer short term solution to improving tetanus toxoid coverage, while service providers, regular immunization and adequate staffing in rural health facilities coupled with adequate vaccine and other logistics constitute long term solution[3]

Studies have shown that in many developing Countries, TT vaccination is poor because many pregnant mother do not receive initial vaccination (TT1) which is the first dose and those who received TT 1 do not receive TT2 [6]. This may be due to the fact that some of the mothers may not have been aware of the risks they and their unborn children are exposed to if the correct TT vaccination is not done [6]. The rate of awareness and attitude among pregnant women on Tetanus toxoid vaccination as regards receiving doses of vaccination was noted in another study.[7] The study revealed that knowledge had a significant relationship with receiving completeness of tetanus toxoid for pregnant women, where women who had high knowledge had a higher opportunity to get a complete vaccination [7]. In the same vein, a study in Nigeria on neonatal tetanus recorded poor awareness. The poor awareness had contributed significantly, to low vaccination and also increased neonatal mortality rate [8].

In addition, a study on awareness, perception and coverage of tetanus immunization in women of childbearing age in an urban district of Lagos, Nigeria, also revealed high (89%) level of awareness of tetanus immunization among respondents and low knowledge regarding the number of doses of vaccine required in pregnancy (14.4%). The study concluded that despite the high level of awareness about TT immunization, there is a low coverage rate among women at childbearing age in Ojodu Local Government Development Area LCDA of Lagos State [9].

Furthermore, another study on immunization coverage of pregnant women with tetanus toxoid vaccine in Dormaa East District- Brong Aharo Region, Ghana revealed that the pregnant women were unaware of when to be immunized and getting access to the vaccination centre is another cause for dropping –out in the course of immunization [10]. World Health Organization (WHO) in its 2009 immunization figures stated that every pregnant woman should have at least TT2 vaccination up to 55%. [11]

The review of available literature indicates a dearth of literature on awareness and tetanus toxoid received by pregnant women attending antenatal clinic in Central Hospital, Benin City, Edo State. Therefore, the main objective was to assess the level of awareness of tetanus toxoid vaccination by pregnant women attending antenatal clinic in Central Hospital, Benin City, Edo State. The specific objective was to assess tetanus toxoid vaccination knowledge, and vaccination dose received.

Methods

Setting

The study was conducted in Central Hospital, Benin City which is an Edo State Government funded 395 bed tertiary hospital and average outpatient annual attendance of 82,181 in 2016. Other than being a referral hospital, it also provides primary and secondary healthcare services to indigenes of Benin City and neighbouring towns and villages. It has a Staff strength of seven hundred and twenty working in twenty-six departments. There are 15 units with 395 bed spaces and 270 Nurse Midwives working in these units of the hospital. Antenatal Clinic (ANC) is run daily from Mondays to Fridays. The Immunisation Unit of the hospital

is responsible for the TT vaccination. The Public Health Nurses in Immunisation Unit visit ANC to give health education talks on TT vaccination on each of the clinic days (Mondays to Fridays).

Study design

This was across-sectional descriptive survey conducted among pregnant women attending antenatal clinic in Central Hospital Benin City. Following ethical approval, a simple random technique was used to select 300 mothers that attended clinic between 5th May and 9th June 2015. Women who had not received any dose of TT during pregnancy and those who have not received up to five doses of the vaccine were included in study.

Instrument for data collection

The instrument for data collection was a close ended questionnaire, designed to assess the level of awareness and tetanus toxoid vaccination received by the study participants. The questionnaire was divided into four sections: section A elicited information on respondents' biographic data, section B; knowledge and awareness of the vaccine, section C; the vaccination received and section D; factors associated with vaccination with TT. A pilot study was carried out using thirty pregnant women not included in the study. Findings from the pilot study assisted the researcher in the removal or rephrasing of questions that were not clear to the respondents. Reliability assessment using Cronbach's alpha was established at 0.85.

Data collection

On the receipt of approval from Edo State Hospital Management Board, the questionnaires were distributed to participants who gave their consent and were educated on the objective of the study. The questionnaires were administered to pregnant mothers attending the pre-natal clinic in Central Hospital, Benin City. The questionnaires were retrieved after being filled and were used for data analysis.

Data analysis

The data collected were analysed using descriptive statistical measures such as frequency distribution and percentages.

Results

Majority of the respondents 172 (57%) were in their reproductive age between 20-29 years. Most of them 130 (43%) had tertiary education. Also majority (47%) were in their second pregnancy (Table 1).

Table 1: Demographic data of respondents

Variable	Frequency (%)
Age	
15- 20	53 (18)
20 -29	172 (57)
30 – 39	66 (22)
> 40	9 (3)
Educational Status	
No formal education	20 (7)
Primary	52 (17)
Secondary	98 (33)
Tertiary	130 (43)
Parity	
First pregnancy	65 (22)
Second pregnancy	140 (47)
Third pregnancy	95 (33)
Total	300 (100)

Most respondents (188, 65%) obtained information about TT vaccines from the antenatal clinic. About 252 (84%) of the respondents were aware of TT vaccination while (203, 69%) were knowledgeable about TT vaccine and the schedule (Table 2).

Table 2: Source of information and awareness/knowledge of tetanus toxoid vaccination

Source of Information	Frequency (%)
Mass media	29 (10)
Friends and relation	60 (21)
Antenatal clinic	188 (65)
Other sources	11 (4)
Missing data	12 (4)
Awareness	252 (84)
Knowledge	203 (69)

Majority of respondents (71%) had received tetanus toxoid. Most of respondents (60%) had received the first dose of tetanus toxoid vaccine (TT1) which indicated that majority of the

pregnant women had received at least one dose of TT vaccine while only 5% had received four doses of tetanus toxoid vaccine (Table 3).

Table 3: Tetanus toxoid received

TT Received	Frequency (%)
Only TT1 (first dose)	180(60)
TT1 and TT2 (1st and 2nd doses)	65(22)
TT3(Third dose)	38(13)
TT4(Fourth dose)	16(5)
Missing data	1(0.3)

Discussion

Findings in this study show that majority of the pregnant women were aware of tetanus toxoid vaccination and have good knowledge of the vaccination schedule.

The high level of awareness of TT vaccination among respondents in this study is similar to the findings of other studies (8, 10). Despite the high awareness and knowledge in this study the respondents did not meet the WHO recommendation that women of child bearing age should commence a 5-dose regime of vaccination against tetanus as early as possible. This is contrary to the findings in other studies (8, 10) where high awareness and knowledge resulted to high usage. Although, the pregnant women claimed to be knowledgeable about TT vaccination the knowledge did not translate to the number of vaccines received as none of the women completed the 5 doses recommended by WHO. However, 60% had TT1 while 22% had TT1 and TT2 which did not meet the WHO 2009 immunization figures that stated that every pregnant woman should have at least TT vaccination up to 55%.[11] This is similar to the findings in another study where those who received TT1 and TT2 were very few[6] The earlier study also revealed that vaccination was poor because many of the pregnant women did not receive TT1 [6]. This is attributed to the fact that many of the women may not be aware of the risks they and their unborn children are exposed to if the correct TT vaccination is not done [6].

In this study, antenatal care facilities have been revealed to be a good medium of creating awareness about tetanus toxoid. Empowering pregnant women with vital information and adequate knowledge would enable them seek for

immunization. Antenatal care facilities should be the focus point for creating awareness and knowledge of TT immunization among pregnant woman.

One of the limitations of the study is the possibility of recall bias, which is a systematic error caused by difference in accuracy or completeness of recollection retrieved (recalled) by study participants regarding events or experiences from the past especially as these events could not be independently verified.

Conclusion

Majority of the respondents have high awareness and knowledge of tetanus toxoid vaccination and majority have also received at least one dose of the vaccine. This suggests that vigorous campaigns could go a long way in increasing their knowledge as regards the recommended 5 doses by WHO. Therefore, the study recommends that pregnant women be encouraged to have regular antenatal care visits to increase chances of vaccination. Health workers should be trained to sensitize women and their family members about the significance of tetanus toxoid. Incentives should be created by stakeholders to boost the morale of health providers and also improve the monitoring and supervision of vaccination.

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