KNOWLEDGE ATTITUDE AND PRACTICES REGARDING TETANUS TOXOID VACCINATION IN REPRODUCTIVE AGE WOMEN (15-49). A DESCRIPTIVE CROSS-SECTIONAL STUDY IN PAK EMIRATES MILITARY HOSPITAL, RAWALPINDI.

Komal Bint E Ajmal, Naila Azam, Farrah Perviaz, Syeda Shehirbano Akhtar, Humaira Mahmood, Sehar Yousaf

Armed Forces Post Graduate Medical Institute/National University of Medical Sciences (NUMS) Rawalpindi Pakistan

ABSTRACT

Background: Tetanus infection caused by bacterium Clostridium tetani is a non-communicable and preventable cause of morbidity and mortality in neonates. Pakistan is one of the very few remaining countries that have yet to achieve the target set by the World Health Organization (2015) for the elimination of maternal and neonatal tetanus. The 2017 WHO report Pakistan shows an alarming situation and a major public health challenge for the country (478 out of 557 neonatal tetanus cases from Pakistan only were reported in the EMRO region.

Objective: To assess the knowledge and attitude of women regarding tetanus disease and tetanus toxoid vaccination. To assess health system practices regarding TT vaccination for pregnant women during antenatal care.

Study Design: Descriptive cross-sectional study.

Place and Duration of Study: Pak Emirates Military Hospital Rawalpindi, from Jul to Dec 2018.

Material and Methods: Descriptive cross-sectional study, conducted at Gynae OPD of Pak Emirates Military Hospital Rawalpindi from July to December 2018. The study enrolled 349 women who met the inclusion criteria by non-probability convenient sampling technique. A validated, structured and researcher administered questionnaire was used for data collection. Data was analyzed using SPSS version 19 and Tableau 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

Neonatal tetanus, a non-communicable and preventable cause of mortality and morbidity has been an important public health challenge worldwide[1]. While developed countries have been successful in eliminating it by hygienic birth practices and immunization of women with TT vaccine, the disease is still prevalent in many low and middle-income countries (LMIC) of the world[2]. According to WHO estimates for the year 2017, there were 2,266 cases of neonatal tetanus reported globally and the highest burden of it was contributed by Africa and EMRO region. Within the EMRO region, Pakistan reported 478 out of 557 total cases of neonatal tetanus for the year 2017. Therefore, this shows an alarming situation and a major public health challenge for Pakistan[3].

Neonatal tetanus occurs due to unhygienic birth practices such as cutting or dressing of umbilical cord stump by use of unsterilized instruments, unhygienic or traditional cord care practices, and inadequate immunization of mother with TT. The incubation period is between 3rd and 28th days after birth. Symptoms are progressive rigidity, arched back, convulsions, and inability to take mother's feed[4].

Correspondence: Dr Komal Bint E Ajmal, DPHS, Armed Forces Post Graduate Medical Institute, Rawalpindi Pakistan
Email: komal.ajmal@gmail.com

Neonatal Tetanus is prevalent in low-income countries and specifically within rural communities with little or no access to healthcare facilities. A majority of deaths go unreported in these countries and due to this reason, it is often referred to as the "Silent Killer"[5].

Strategies to prevent neonatal tetanus include immunization of pregnant women with TT and promoting clean deliveries and cord care practices by skilled birth attendants[6]. PDHS (2017-2018) shows that 69% of women had their last live birth protected against neonatal tetanus by TT. It also highlights that vaccination coverage of TT varies with education status of women i.e. women who have higher education are more likely to be vaccinated with TTCV (Tetanus toxoid containing vaccine) as compared to women with low education level. Significant coverage disparities also exist between the urban and rural population of Pakistan. WHO recommends greater than 90% of TTCV vaccination coverage in high-risk areas[7].

As of March 2018, most of the countries (45 out of 59) had achieved the maternal and neonatal tetanus (MNT) elimination target. MNTE is described as "less than one case of neonatal tetanus in every district per 1000 live births"[8]. Unfortunately, Pakistan is one of the remaining 14 countries, which have failed to achieve this target till now[9].

No recent substantial studies in Rawalpindi have been done on tetanus immunization as an important health issue. This research study primarily aims to assess the knowledge and attitude of women belonging to the reproductive age regarding tetanus disease and tetanus toxoid vaccination. It also aims to access the practices of health care system in coverage of pregnant women with TT vaccine.

MATERIAL AND METHODS

This descriptive cross-sectional study was carried out at Gynae OPD of Pak Emirates Military Hospital Rawalpindi from July to December 2018. Formal approval from the institutional review board of Armed Forces Post Graduate Medical Institute was received prior to the start of the study. The sample size was calculated to be 349 via EPI-INFO software, based on 65.13% overall prevalence of knowledge for tetanus vaccination, as per the literature. Non-probability convenient sampling technique was used for this study. Married women in their reproductive age (15-49), both pregnant and not pregnant who were attending Gynae OPD were included in the study while women who refused to participate due to time constraints or severe illness were excluded. A pilot study was conducted on a sample of 25 women for the adaptation of the validated structured questionnaire. Being researcher administered, verbal consent was taken from the participants by the researcher before proceeding with data collection. Respondent's confidentiality and anonymity were maintained and a serial number was given to each respondent's questionnaire form. The statistical analysis of data was performed using SPSS and Tableau software.

RESULTS

Given the study was conducted at Pak Emirates Military Hospital, 90% of the women reported having an Army background. The mean age of women was 26.90 SD ± 4.376 with the range of 17 to 43 years. 328 women out of 349 were pregnant at the time of the study. The study participants were a good mix of diverse socio-demographic characteristics. Punjabi (45.56%) was the most common language spoken at the household of participants. About 66% of women lived in a joint family system. Approximately 30% of women reported to have matric level education and only 10% of women were working in either government or private sector at the time of the survey.

Knowledge of Tetanus Disease

Only 8.88% of women reported to have the knowledge or have heard of the tetanus disease while the majority (318 or 91.2%) was oblivious as illustrated in fig-1. This demonstrates that women had poor and insufficient knowledge.

Knowledge of Tetanus Toxoid (TT) vaccination

Fig-2 shows that a majority of the respondents (91.12%) lacked knowledge of tetanus toxoid vaccination. Only 31 respondents (8.88%) reported being familiar with vaccination for TT.

TT Vaccination Coverage Among Pregnant Women

Women in their last trimester were inquired if they had been a recipient of any vaccination after the completion of their 6th month of pregnancy. The responses are shown in figure 3 which demonstrates that the majority 85% of pregnant women were vaccinated with two doses of TT during their current pregnancy at a health care facility.

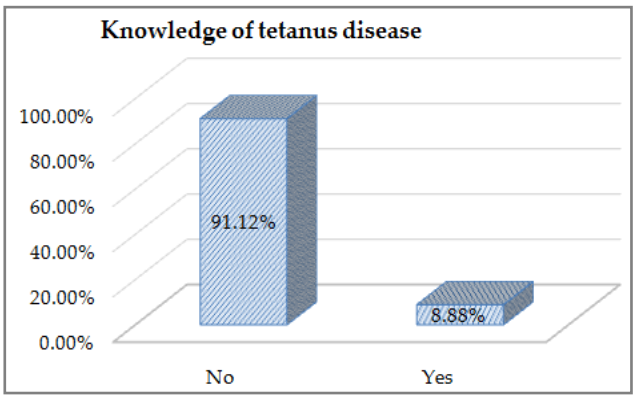

Figure-1: Knowledge about tetanus disease.

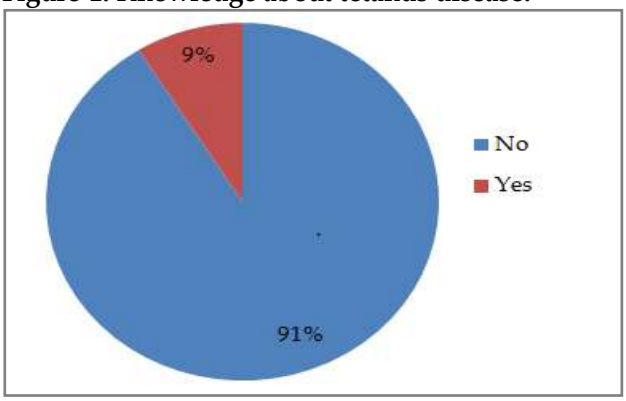

Figure-2: Knowledge of tetanus toxoid vaccination.

Health Education Practices of the Health Care Providers Regarding TT Vaccination

Participants were inquired if their health care providers had informed them of the importance of TT vaccination during their antenatal checkup. Almost all women (99.71%), reported that such information has never been provided by their doctor or the vaccinator.

DISCUSSION

The objective of this study was to determine the knowledge about tetanus disease and TT immunization among women of reproductive age. It also assessed health care system practices regarding TT immunization coverage and also the provision of health education to women.

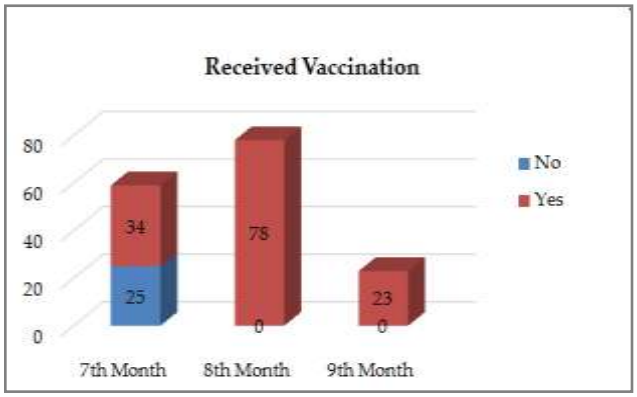

Figure-3: TT vaccination coverage in pregnant women.

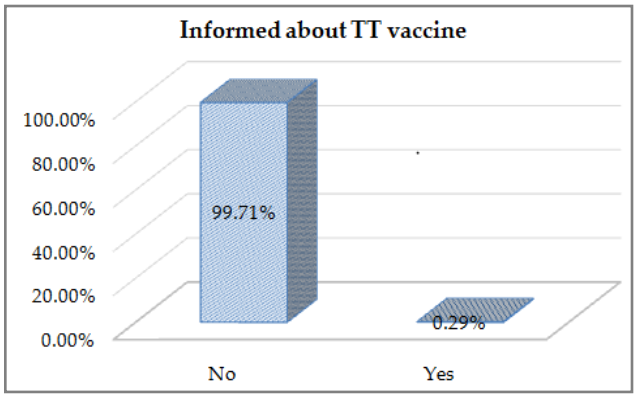

Figure-4: Provision of information regarding TT vaccine by the health care provider.

The study revealed that women had inadequate knowledge about tetanus infection, its symptoms, and prevention. Only 9% of women knew or had heard about tetanus at some point in their life. Similarly, only 9% of women were aware of the importance of TT immunization in protecting the mother and child from acquiring tetanus infection during or after birth.

A study was conducted in the peri-urban areas of Karachi (n=450) where it was reported that 71% of women were familiar that vaccinations are good for health as they protect against deadly diseases while 41% of them knew where the closest vaccination center is located. In contrast, our study reported that a higher proportion of 92.55% of women were familiar with the importance of vaccination for good health and 72% knew the location of the nearby vaccination center. The difference in terms of the knowledge can be attributed to the varying educational status of women in the two studies. In the reference study, 54% of the participating women had never attended school while 18% were matriculated. In contrast, 20% of women included in our study had never attended school while 30% had passed matriculation. Such a contrasting result based on the educational status of the women may hint towards the role that education plays in determining the behaviors and attitude of people towards health. The prior study reported knowledge of 9.7% among the women which is consistent with our study that reported 9.45% of the participants being familiar with Tetanus. Furthermore, 8.88% of the participants in the previous study claimed the tetanus infection to be life-threatening for the mother and the baby. The same statistic was reported at 6.87% in our study. The reference study established that only 4.9% of the women had knowledge about the symptoms of the Tetanus disease which was further reduced to 4% in our study. While the previous study reported the transmission at 2.4%, our study stated it to be 5.4% instead. 5.7% of the participants in the reference study were aware that Tetanus is preventable. The proportion was increased in our study where 12.6% of the women knew it to be preventable.

As evident, the knowledge regarding Tetanus among the women of reproductive age who were visiting a tertiary care hospital in Rawalpindi was found to be somewhat similar to that of the women in a peri-urban settlement in Karachi. The results hint towards insufficient knowledge of the disease among the women of reproductive age even if they were attending and were receiving regular antenatal checkups at a tertiary care hospital[10].

Of 66% of the participants in our study belonged to a joint family setup with a mere 13.18% claiming to be the sole decision-maker in seeking healthcare. Studies have established a strong correlation between the women having the power of decision and their demand for vaccination. A study was conducted in Peshawar that reported 89.5% of women of reproductive age believing immunization to be critical for good health while only 55.6% of them were actually vaccinated against tetanus. Such data was consistent with our study that stated 92.55% of women were familiar with the importance of immunization and 85% were being vaccinated during their current pregnancy[11].

In a Nigerian study (n=300), 65% (188) of the respondents were found to have obtained the required information about TT vaccine from the antenatal clinic. Our study, on the other hand, diverged markedly since almost all of the women claimed to have received no education regarding TT during their antenatal visits. This is what hints towards a major need for health education practices regarding Tetanus in the healthcare centers of Pakistan. Furthermore, the Nigerian study reported 84% (252) of the participants to be familiar with the TT vaccination which is in contrast to our study in which as much as 91% of the women lacked familiarity. The data for the reception of the TT vaccine was, however, somewhat similar with 60% of the participants in the Nigerian study having received at least dosage of the TT1 while 85% of the women in their last trimester claimed to have received the dosage in our study[12].

A study was conducted in Karbala city that included 130 pregnant women who were attending the primary health care center. The results depicted 72.3% of the participants responded to have not received any information regarding the Tetanus toxoid containing vaccine

by the healthcare providers. This data is consistent with our present study in which 99.71% of the women reported that none of the healthcare providers informed about the importance of tetanus vaccine during any of their antenatal visits[13].

Overall, the tetanus toxoid coverage among pregnant respondents of present study was satisfactory as 85% of pregnant women were vaccinated with atleast two doses of TT during their current pregnancy at health care facility which is higher than another local study which showed that tetanus toxoid coverage was only 43% and such percentage is much lower than recommended by World Health Organization (WHO) i.e. 90% coverage for females residing in high-risk areas[14].

Regarding the knowledge about tetanus fatality, our study showed that majority of the respondents (92.26%) did not know anything about the fatality of the disease on mothers and newborns which is similar to the findings of a survey, conducted in Karachi where 85% of the study participants were not aware about the fatality and seriousness of the disease and 75% of participants mentioned that they did not know whether tetanus could kill newly born babies[15].

Thus, it is imperative to aware public regarding tetanus, its symptoms and its prevention for which not only health workers but media has to play an important part. Women should be educated to create sustainable demand for this preventive service.

CONCLUSION

Majority of the women had poor and inadequate knowledge regarding tetanus disease and the importance of TT vaccination. Despite good vaccination coverage for pregnant women at Pak Emirates Military Hospital, it was concluded that women had never been informed about the importance of TT vaccine by any health care provider during their antenatal visits. The insufficient knowledge and lack of awareness about the disease and its vaccination 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 Pakistan, health education and health communication is an effective tool. Sustained health education focusing on the importance of TT vaccination by using print or electronic media and creating awareness sessions by LHW or EPI vaccinators should be done for reproductive age women and their families. This will not only modify health-seeking behaviors but will also create demand for getting the vaccination done among women.

LIMITATION OF STUDY

The study was conducted at a tertiary care hospital on the fairly educated women. This creates a question of generalizability since the results could be significantly worse if it was a community-based study performed on the underprivileged social class. Furthermore, the study was confined to the quantitative component due to the time constraints. Including the qualitative component would have provided an opportunity to perform an in-depth study with a better and clear understanding of the knowledge and healthcare practices regarding Tetanus.

CONFLICT OF INTEREST

This study has no conflict of interest to be declared by any author.

REFERENCES

1. Quddus A, Luby S, Rahbar M, Pervaiz Y. Neonatal tetanus: mortality rate and risk factors in Loralai District, Pakistan. Intl J Epidemiol 2002; 31(3): 648-53.
2. Vandelaer J, Birmingham M, Gasse F, Kurian M, Shaw C, Garnier S. Tetanus in developing countries: an update on the Maternal and Neonatal Tetanus Elimination Initiative. Vaccine 2003; 21(24): 3442-5.
3. Organization WH. Statistics on Neonatal Tetanus 2018 [cited 2019]. Available from: https://www.who.int/immunization/monitoring_surveillance/burden/vpd/surveillance_type/active/neonatal_tetanus/en/
4. Lawn JE, Cousens S, Zupan J, Team LNSS. 4 million neonatal deaths: when? Where? Why? Lancet 2005; 365(9462): 891-900.
5. Galazka AM, Stroh G. Neonatal tetanus: guidelines on the community-based survey on neonatal tetanus mortality. 1986.

6. Fauveau V, Mamdani M, Steinglass R, Koblinsky M. Maternal tetanus: magnitude, epidemiology and potential control measures. Intl J Gynecol Obs 1993; 40(1): 3-12.
7. Hasnain S, Sheikh N. Causes of low tetanus toxoid vaccination coverage in pregnant women in Lahore district, Pakistan. Eastern Mediterranean Health J 2007; 13(5): 1142-52.
8. Khan R, Vandelaer J, Yakubu A, Raza AA, Zulu F. Maternal and neonatal tetanus elimination: from protecting women and newborns to protecting all. Intl J Women's health 2015; 7: 171.
9. Organisation WH. Maternal and Neonatal Tetanus Elimination (MNTE) 2018 [cited 2018]. Available from: http://www.who.int/ immunization/diseases/MNTE_initiative/en/.
10. Shafiq Y, Khowaja AR, Yousafzai MT, Ali SA, Zaidi A, Saleem AF. Knowledge, attitudes and practices related to tetanus toxoid vaccination in women of childbearing age: A cross-sectional study in peri-urban settlements of Karachi, Pakistan. J Infect Prev 2017; 18(5): 232-241.
11. Naeem M, Khan MZUI, Abbas SH, Adil M, Khan A, Naz SM, et al. Coverage and factors associated with tetanus toxoid vaccination among married women of reproductive age: A cross sectional study in Peshawar. J Ayub Med Coll Abbottabad 2010; 22(3): 136-40.
12. Enuku CA, Orru O. Awareness of tetanus toxoid vaccination by pregnant women attending antenatal clinic in central hospital, Benin City. J Sci Pract Pharm 2016; 3(1): 92-6.
13. Abbas IM, Seger HR. Assessment of Pregnant Women's Knowledge about Tetanus Toxoid Vaccination in Karbala City. Nursing national Iraqi specility 2014; 27(1): 23-31.
14. Lambo JA, Nagulesapillai T. Neonatal tetanus elimination in Pakistan: progress and challenges. Intl J Infec Dis 2012; 16(12): e833-e42.
15. Wasay M, Malik A, Fahim A, Yousuf A. Knowledge and attitudes about tetanus and rabies: a population-based survey from Karachi, Pakistan. J Pak Med Assoc 2012; 62(4): 378.