

Vaccine in Women of Karachi

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ABSTRACT

Objective: To determine Awareness of Tetanus Toxoid Vaccine in Women of Karachi.

Study Design: Cross-sectional study

Place and Duration of Study: This study was conducted at the at Jinnah Post Graduate Medical Center, Karachi from July 2018 to November 2018.

Materials and Methods: A study was conducted on a sample of 400 females. The sample was taken through Non-Probability Purposive Sampling within a study period. An informed verbal consent was taken from the candidates. Pilot study was conducted to assess the authenticity of the questionnaire. A structured questionnaire was then distributed, got filled, data was entered and analyzed using SPSS version 20, with 95% confidence interval and p-value ≤ 0.05 considered as statistically significant

Results: A total of 400 women were asked about the Tetanus Toxoid Vaccine. Out of 400 women 290 (72.5%) knew about Tetanus Toxoid Vaccine while 110 (27.5%) had no idea about it. Of these 290 women who had awareness 220 (76%) were unmarried while 70 (24%) were married. Out of 110 females who didn't have awareness 35 (32%) were married and 75 (68%) were unmarried. Out Of 290 Women who had awareness 214(88%) were students,23 (69%) were working women 53(42%) were house wives .Women who had awareness 160(55.1%) got to know about this from friends, family and other relatives while 130(44.8%) had been told by health care providers at some point in their lives.

Conclusion: Despite development of highly effective preventive measures, high rate of tetanus in Pakistan points towards lack of preventive measures. Reasons for lack of regular vaccination for tetanus include low level of education, unavailability of immunization centers near to residence, misconceptions regarding vaccination among women such as it might cause infertility, anaphylactic reactions and misconception of TT being a contraceptive. There is a dire need for Policy Formulation And Programme Implementation For increasing awareness amongst the women For Optimum Immunization with tetanus toxoid including the schedule and booster dosage .

Key Words: Awareness, Tetanus, Toxoid, Women, Immunization

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INTRODUCTION

Tetanus also known as lock jaw is a neurologic syndrome caused by bacterium *Clostridium tetani*. It is vaccine preventable infectious disease that does not spread from person to person¹. It results in an annual total 3,09,000 deaths². *Clostridium tetani* is an obligate anaerobic, gram-positive rod that is motile and readily forms endospores. It dwells in soil, dust and manure. This bacteria generally enters through a discontinuity in the skin either in the form of a puncture wound or cut with a contaminated object.³ Bacteria produce toxins that interfere with muscle contractions and produce muscle spasms and hypertonia typical of the disease.

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Severe spasms can even lead to bone fractures⁴. Other presenting symptoms include headache, fever, sweating, dysphagia, hypertension and tachycardia.⁵ Tetanus is diagnosed clinically by its typical clinical manifestations as there are no specific diagnostic laboratory tests .⁶Most common types of injuries associated with tetanus are puncture wounds followed by lacerations and abrasions.⁷

Tetanus can be prevented through the administration of tetanus toxoid (TT) which is available in different forms i.e. DPT(Diphtheria pertussis, tetanus), DT(diphtheria tetanus),TT(tetanus toxoid),ATS(anti-tetanus serum) and is highly effective preventive measure in medical practice with extremely low failure rates⁸. The protective titer of neutralizing antibody clinically accepted is 0.01 U/ml.⁹

Vaccines are considered as one of the most effective public health interventions.¹⁰ Increasing number of cases of Maternal and Neonatal Tetanus (MNT) is attributed to a triple failure of public health in terms of routine vaccinations, antenatal care and clean delivery/umbilical cord care services.¹¹ The WHO

recommends that 90% of the females living in high-risk areas should be vaccinated against tetanus.¹². WHO estimated that neonatal tetanus killed about 49,000 newborn children in 2013, a 94% reduction from the situation in 1988 when an estimated 787,000 newborn babies died of tetanus within their first month of life.¹³ and in Pakistan 22000 neonatal deaths occur annually due to MNT.¹⁴ Vaccination of mothers with tetanus toxoid (TT) is recommended and practiced worldwide, and has resulted in fall in the incidence of maternal and neonatal tetanus.¹⁵ with no evidence of adverse effects either to the mother or fetus.¹⁶ MNT elimination is defined as achievement of less than 1 case of neonatal tetanus in every district of a country per 1000 live births annually.¹⁷ The 3 key strategies for achieving MNT elimination recommended by WHO are: administration of at least 2 doses of tetanus toxoid (TT2) to all pregnant woman in high risk areas and 3 doses (TT3) to all females of child bearing age.⁹ Studies have demonstrated that to be maximally effective, the first two doses of TT (TT1 and TT2) should be given with interval of at least 4 weeks between them and the ideal interval between TT2 and birth being at least 4 weeks.¹⁸. The main objective of this study was to determine the awareness of tetanus toxoid in women of Karachi.

MATERIALS AND METHODS

A Cross-sectional study was conducted on a sample of 400 females attendants of patients admitted to Jinnah Postgraduate Medical Centre, Karachi .The sample was taken through Non-Probability Purposive Sampling within a study period of four months from July 2018 to November 2018.A well-constructed questionnaire which was translated into Urdu and Sindhi for convenience of the participants was used. Questions asked were related to age, education, marital status, parity, occupation, awareness of tetanus toxoid vaccine, its dosage and booster and prior vaccinations. Females who had received even one dose of tetanus toxoid vaccine were considered as vaccinated. Pilot study was conducted to assess the authenticity of the questionnaire. Data collected was entered and analyzed using SPSS version 20, with 95% confidence interval and p-value <= 0.05 considered as statistically significant.

RESULTS

A total of 400 women were asked about the Tetanus Toxoid Vaccine . Data was collected from these . Their number and respected ages were 139 who ranged from 12 to 20 years, 166 ranged from 21 to 30 years , 52 ranged from 31 to 40 years, 38 ranged from 41 to 50 years and 5 ranged from 50 to 60 years. Mean age was 26+-10 (mean +-S.D). 243(60.7%) women were students, 33(8.25%) were working women and

124(31%) were house wives. 256 women were married while 144 were unmarried. 72.5%(290) of women knew about tetanus toxoid vaccine while 27.5%(110) had no idea about it. Of those who had awareness 160 (55.1%) got to know about this from friends, family and other relatives while 130(44.8%) had been told by health care providers at some point in their lives. Of 290 women who had awareness 220 (76%) were unmarried while 70(24%) were married, of 110 women who did not have awareness 35 (31%) were married and 75 (69%) were unmarried. When T-test was applied to occupation and awareness of tetanus toxoid p-value was found to be <0.05(0.01). 214 (88%) were students, 23 (69%) were working women 53(42%) were house wives . Women who had awareness 160(55.1%) got to know about this from friends, family and other relatives while 130(44.8%) had been told by health care providers at some point in their lives. Of 400 women only 46 (11.5%) knew the correct doses of tetanus toxoid vaccine. 139 (34.7%) women knew that after every ten years a booster for this vaccine is recommended.

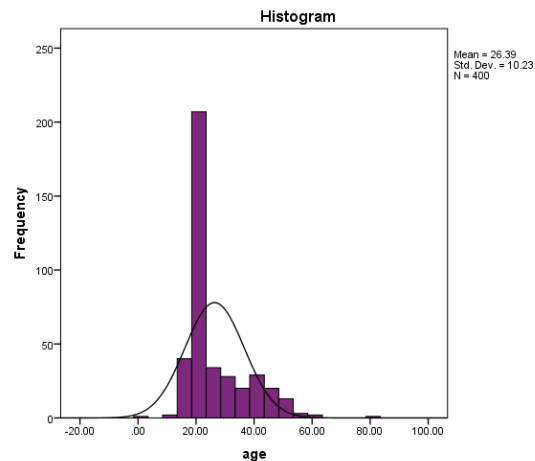


Figure No.1: Age of individuals.

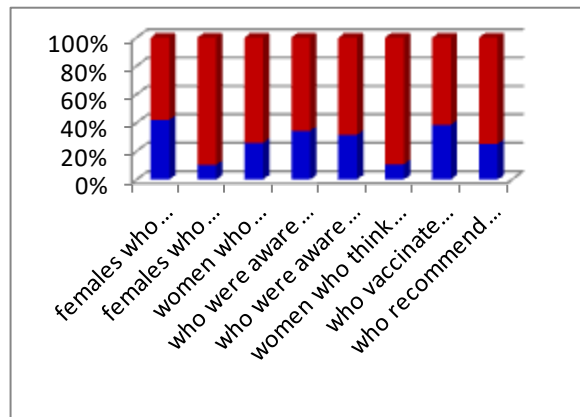


Figure No.2: Variables which show awareness of TT in females. Percentage of aware women is showed in Blue colour. N=400

209(50.1%) women knew that tetanus toxoid vaccine is recommended during pregnancy while only 184(44%) knew that if not given during pregnancy this vaccine can cause harmful events. 48 (11%) of women said that they had never opted for vaccines because they thought of it as harmful to health. 252(63%) women claimed that they regularly vaccinate their family members. 135 (33.5%) women spread awareness of this vaccine amongst family and friends.

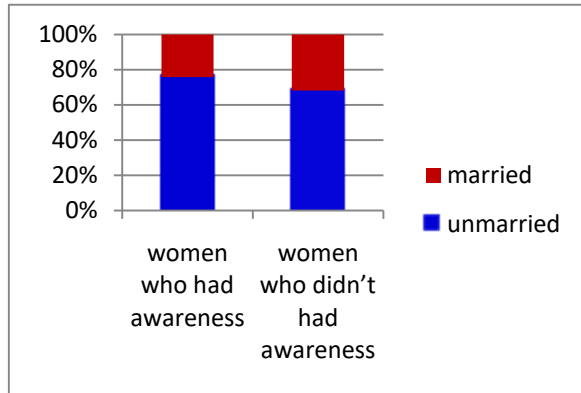


Figure No.3: Awareness in women compared with their marital status

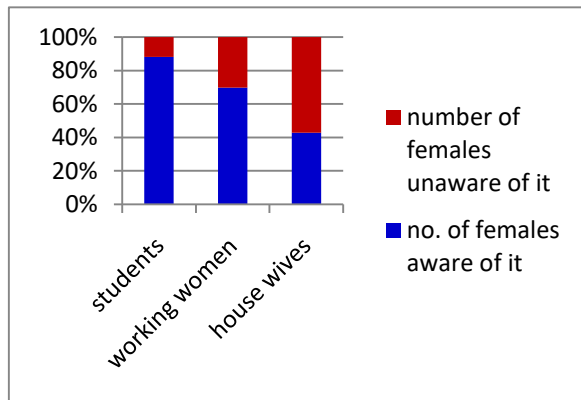


Figure No.4: Awareness in females compared with occupation

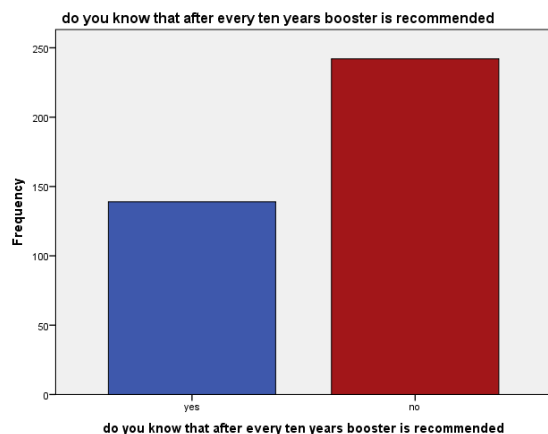


Figure No.5: Awareness in regarding Booster Dose of Tetanus Toxoid

DISCUSSION

Despite of development of highly effective preventive measures, high rate of tetanus in Pakistan points towards lack of initiative to work on these preventive measures.¹⁹ Education regarding vaccination severely lacks among our population, which have little to no education on health care.²⁰ Reasons for lack of regular vaccination for tetanus include low level of education, unavailability of immunization centers near to residence, misconceptions regarding vaccination among women such as it might cause infertility, anaphylactic reactions and misconception of TT being a contraceptive²¹. Lack of family support to women plays big time role in our part of the world.²² 290 women who had awareness 220 (76%) were unmarried while 70(24%) were married, of 110 women who did not have awareness 35 (31%) were married and 75 (69%) were unmarried. This corresponds with another study conducted in Peshawar city where married women had awareness of TT vaccine compared with women less than age 20 or those who are above 30 but not yet married or pregnant²³. The study showed that Women who had awareness 160(55.1%) got to know about this from friends, family and other relatives while 130(44.8%) had been told by health providers at some point in their lives. The study showed that out of 400 women only 46 (11.5%) knew the correct doses of tetanus toxoid vaccine. This was similar to a study conducted in Nigeria where there was a low level of awareness regarding the number of doses of the vaccine required in pregnancy(14.4%) and for life protection (19.5%).²⁴ The Study showed that 139 (34.7%) women knew that after every ten years a booster for this vaccine is recommended. This was also found in a study conducted In India.²⁵

CONCLUSION

Despite development of highly effective preventive measures, high rate of tetanus in Pakistan points towards lack of preventive measures. Reasons for lack of regular vaccination for tetanus include low level of education, unavailability of immunization centers near to residence, misconceptions regarding vaccination among women such as it might cause infertility, anaphylactic reactions and misconception of TT being a contraceptive. There is a dire need for Policy Formulation And Programmme Implementation For increasing awareness amongst the women For Optimum Immunization with tetanus toxoid including the schedule and booster dosage .As directed by WHO, all countries are committed to "elimination" of Maternal And Neonatal Tetanus (MNT), i.e. a reduction of neonatal tetanus incidence to below one case per 1000 live births per year in every district . So far 14 countries

including Pakistan, remain that have not eliminated Maternal And Neonatal Tetanus.

Author's Contribution:

Concept & Design of Study: Tafazzul H Zaidi
 Drafting: Faheem Ahmed
 Data Analysis: Kiran Mehtab
 Revisiting Critically: Tafazzul H Zaidi,
 Faheem Ahmed
 Final Approval of version: Tafazzul H Zaidi

Conflict of Interest: The study has no conflict of interest to declare by any author.

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