

# Tetanus Toxoid Vaccination coverage and Reason for non-vaccination among females of reproductive age group

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**Abstract- BACKGROUND:** A description and cross-sectional study was carried out among married and non gravid females of reproductive age group admitted at Doctor's Trust Teaching Hospital Sargodha to find out at tetanus toxoid coverage and reason for non vaccination among them.

**OBJECTIVES:** To determine the vaccination coverage of Tetanus Toxoid among females of reproductive age and to find out reason for non vaccination of tetanus Toxoid.

**INCLUSION CRITERIA:** Females of reproductive age group visiting OPD of Gynae/Obs for consulting regarding problems of Gynae/Obs, married ever gravid females and pregnant females.

**METHODOLOGY:** A sample of 47 ever gravid females of reproductive age group was taken through systemic random sampling. After taking consent the sample was collected through structured questionnaire.

## RESULTS

Total 47 females fulfilling the criteria were interviewed with mean age 15-49 years with 132 full term pregnancies and going through 159 reproductive events. Out of total abortion rate was 12.55%, still birth 4.4% and fertility rate is 3.38%. Among the 29(61.7%) were immunized against tetanus toxoid coverage and 18(38.3%) were not immunized. Out of total females 18(38.3%) completed the course of five injections and 29(61.7%) did not complete the course of five injections.

## CONCLUSIONS

The present study concludes that majority of females of reproductive age group admitted in Doctor's Trust Teaching Hospital Sargodha are not vaccinated against tetanus toxoid.

**Index Terms-** Tetanus ,Tetanus Toxoid coverage

## I. INTRODUCTION AND LITERATURE SEARCH

Tetanus is a vaccine preventable , non-contagious infectious disease caused by exotoxin of clostridium tetani,characterized by muscular rigidity. Disease manifests by painful paroxysmal spasm of voluntary muscles like Masseters, Facial muscles, Muscles of back and neck and those of lower limb and abdomen. Mortality of disease varies from 40-80%. Case fatality rate 80-90% in neonatal tetanus. The particular concern is maternal and neonatal tetanus(MNT) as it is estimated that every year worldwide 5% of maternal death occurs due to tetanus and 14% of all neonates dies due to MNT {1}.

Tetanus can occur at any time during life of mother specially within 6 weeks after unhygienic delivery. Women who deliver under unhygienic condition and low tetanus toxoid immunization are at high risk to develop tetanus neonatorum. In neonates tetanus can be prevented by 3C's i.e clean hands , clean delivery surface and clean cord cutting. {1}.

Pakistan is one of the eight high burden countries which account for 73% of neonatal tetanus death. In Pakistan 22000 neonatal deaths occur every year due to tetanus. Pakistan is included in countries where more than 50% of the districts are at higher risk for MNT because of limited health infrastructure which is indicated by 50% or lower coverage of T.T vaccination. There is also a variation in T.T coverage even across the provinces of Pakistan. In a study conducted in district Peshawar,65% of women in urban areas were vaccinated while in rural areas showed 60% coverage, while a study in Lahore district showed 87% coverage {2,3}.

Factors for non immunization in Pakistan involves lack of knowledge , low literacy rate ,non availability of health services and misconception that vaccination may be harmful for the baby.

WHO initiated EPI in May 1974 to vaccinate children throughout the world. In 1984, WHO established a standardized vaccination schedule for EPI, Pakistan started EPI in 1978, in Pakistan EPI recommend 2 doses of T.T vaccination during pregnancy {1}.

According to a study in Pakistan ,percentage of women receiving 2 doses of T.T vaccination was 56% in 2002, 57% in 2003, 45% in 2005 and 53% in 2006 { 4}.

Out of a random sample of 362 women who had delivered during the previous three months,87% recalled receiving were poor knowledge about the importance of TT. The main reason for non-vaccination were poor knowledge about the importance of TT (32% of women) or the place and time to get vaccinated (18%). According to manager and primary healthcare medical officers, the main reason for low coverage were lack of awareness about the importance of vaccination among the public and misconception about TT vaccination (e.g. that it was a contraceptive).{5}

### OBJECTIVE

1. To determine the vaccination coverage of tetanus toxoid among females of reproductive age.
2. To find out reason for non-vaccination of tetanus toxoid.

### HYPOTHESIS

1. Null hypothesis: There is no relationship b/w social, economic and demographic factors and non-vaccinated of tetanus toxoid.
2. Alternate hypothesis: There is relationship b/w social, economic and demographic factors with non-vaccinated of tetanus toxoid vaccine.

### RATIONALE OF STUDY

The purpose of doing this study was :

Disease fatality rate among neonates/adults. It is 100% preventable by toxoid vaccinatn. People are unaware of it and also unaware that state is providing free vaccination coverage.

## II. MATERIAL AND METHODOLOGY

### Setting

Doctor's Trust Teaching Hospital Sargodha

### Study design

Descriptive cross sectional study

### Study population

All women of reproductive age group (15-49 years)

### Duration

6 months ( 2 months for data coverage)

### Target Population

Married ever gravid females of reproductive age group (15-49 years)

### Inclusion criteria

- Females of reproductive age group visiting OPD of Gynae/Obs for consultancy regarding problems of Gynae/Obs.
- Married ever gravid females.
- Pregnant females

### Exclusion criteria

- pregnant ladies of 1<sup>st</sup> trimester.
- Widows
- Unmarried
- Attendants accompanying study subjects

### SAMPLE SIZE

Total turnover was 500 , Prevalence of the problem was 13% non vaccination rate of TT. Worst acceptable was 18.5%. At 95% confidence level and 5% margin of error, the minimum estimated sample size was 110 females.

Through EPI information program version 6.2, the researcher will take 30 subjects because there are time and financial constraints.

#### SAMPLING TECHNIQUES

Non probability convenient sampling

#### TOOLS OF MEASUREMENT

Structured questionnaire with open and closed ended question was being developed to get related information .

#### PRETESTING

After finalizing the questionaire , all batch members under strict supervision were trained to learn the act of presenting the questionnaire . The deficiencies and mistakes were pointed out and corrected.

#### DATA COLLECTION PROCEDURE

The batch members were individually assigned to patients under study to get the structured questionnaire filled.

#### DATA ENTRY

- Microsoft Excel
- Microsoft Word

#### ETHICAL CONSIDERATION

Consent was taken from chair of community medicine before research and permission letters addressing the concerned center was presented and consent was taken prior to meeting the concerned subjects. The principle of confidentiality and other ethical guidelines were strictly maintained and followed in its letter and spirit.

**WORK PLAN**

1<sup>st</sup> we got permission from higher authorities and informed consent performa were used to get willingness of participants. Then synopsis was compiled and literature research was done within the budget. Data was collected from female patients visiting OPD of Gynae/Obs of DTTH by means of questionnaire. Analysis of data was done by using SPSS. Rate and proportions were calculates and chi-square test of significance was applied to find out the relationship of different factors with non-vaccination.

**III. ANALYSIS**

**Practices against Tetanus**

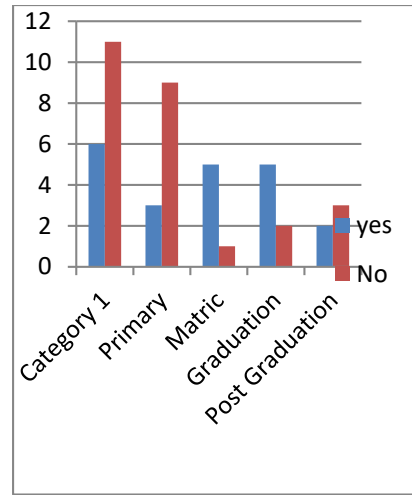
Immunized against Tetanus Toxoid	Frequency	Percent
yes	29	61.7
No	18	38.3
Total	47	100

Completed course of 5 injections	Frequency	Percent
Yes	18	38.3
No	29	61.7
Total	47	100

If yes then from which center	Frequency	percent
BHU	11	23.4
RHC	1	2.1
DISTRICT HOSPITAL	8	17.0
PRIVATE CLINIC	27	57.4
Total	47	100

**RESPONDENT Edu. Tetanus Neonatorum Cross Tabulation**

Respondent Edu.	Tetanus Neonatorum		Total
	Yes	No	
Illetrate	6	11	17
Primay	3	9	12
Matric	5	1	6
Graduation	5	2	7
Post Graduate	2	3	5
Total	21	26	47



(BAR CHART)

➤ Result of T.T vaccination coverage:

Respondent Education	Frequency	Percent
Illiterate	17	36.2
Primary	12	25.5
Matric	6	12.8
Graduation	7	14.9
Post graduation	5	10.6
Total	47	100

Total children	Frequency	Percent
No Children	5	10.6
<3 years	23	48.9
>3 years	19	40.4
Total	47	100

Total Abortions	Frequency	Percent
0	31	66
1	12	25.5
2	2	4.3
3	2	4.3
Total	47	100

Total Family members	Frequency	Percent
<4	5	10.6
>4	42	89.4
Total	47	100

Income/Capital/month	Frequency	Percent
<2500	23	49.0
2500-5000	16	34.0
>5000	8	17.0
Total	47	100

Total still birth	Frequency	Percent
0	41	87.2
1	5	10.6
2	1	2.1
Total	47	100

VACCINATION EXPERIENCE OF 132 PREGNANCIES EXPERIENCED BY BY 47 FEMALES

Antenatal visit	Frequency	Percent
No visit	45	34.1
<3	35	26.5
>3	52	39.4
Total	132	100

Home delivery	Frequency	Percent
Yes	54	40.9
No	78	59.1
Total	132	100

T.T vaccination	Frequency	Percent
Yes	89	67.4
No	43	32.6
Total	132	100

At which Timester	Frequency	Percent
No Response	48	36.4
2 <sup>nd</sup> Trimester	2	1.5
3 <sup>rd</sup> Trimester	82	62.1
Total	132	100

Reason of Non-Vaccinated 47 Females ever had experienced pregnancy

Awareness of vaccination	Frequency	percent
yes	33	25
No	99	75
total	132	100

Fear of abortion	frequency	percent
No	132	100

Fear of side effects	frequency	Percent
No	132	100

Distant facility	frequency	Percent
Yes	3	2.3
No	129	97.7
total	132	100

Non availability	frequency	Percent
No	132	100

No permission	frequency	Percent
No	132	100

Non Affordable	frequency	Percent
No	132	100

T.T vaccination Coverage

Variables		T.T vaccine		P-value	Relative risk	Remaks
		Yes	No			
Education of responders	Yes	20	10	0.35	1.26	Literates are 1.26 times more in vaccination practice than illetrates
	No	9	8			

>3 antenatal visits	Yes	44	8	0.38	1.10	Those women who have experience >3 antenatal visits they have 1.10 times more vaccination practice
	No	27	8			
Home delivery	Yes	37	52	0.82	1.05	There is no significant difference between home delivery and vaccination practice (RR-1.0)
	No	17	26			
Distant facility	Yes	0	3	0.12		Distance (far away health facility) has no impact on vaccination practices
	No	89	40			



#### IV. RESULTS

- Total 47 females fulfilling the criteria were interviewed with mean age 15-49 years with 132 full term pregnancies and going through 159 reproductive events.
- Out of total , abortion rate was 12.55%, stillbirth 4.4% and fertility rate is 3.38%. Among the females 29 (61.7%) were immunized against Tetanus toxoid coverage and 18 (38.8%) were not immunized.
- Out of total females 18(38.8%) completed the course of five injection and 29(61.7%) didn't complete the course of five injection.
- Transmission of tetanus through unhygienic delivery practice was 44.7%. Among total females 26(53.3%) had knowledge about tetanus disease and 21(44.7%) were not aware of fatal disease.

#### V. DISCUSSION AND CONCLUSION

Tetanus toxoid vaccination is important to prevent the increasing spread of tetanus disease among ever gravid females of reproductive age group. Although research was limited due to limited resources and time and as such extract reports were not available regarding the vaccination of ever gravid females of reproductive age group admitted at DTTH . But generally speaking , tetanus toxoid vaccination can limit the trans-placental spread of tetanus disease from mothers to newborns so as it will limit the neonatal mortality rate due to tetanus neonatorum.

#### VI. CONCLUSION

The present study concludes that majority of females of reproductive age group admitted at DOCTOR'S TRUST TEACHING HOSPITAL SARGODHA are not vaccinated against tetanus toxoid. Most of interviewed females were not aware of disease, its spread and availability of vaccine. Hence proper vaccination can prevent the individual from deleterious effects of tetanus.

#### VII. RECOMMENDATIONS

- Vaccination of tetanus toxoid in females of reproductive age group.
- Hygienic delivery practices that includes
  - i. Clean hands
  - ii. Clean delivery surface
  - iii. Clean cutting and care of cord

#### REFERENCES

- [1] Park.K Epidemiology of communicable disease, Tetanus .In text book of preventive and social Medicine. Ed 20th .M/S Banarsi das Bhonat Jabalpur,India 2009;272
- [2] Elimination of maternal and neonatal tetanus. [cited 10 september 2010]
- [3] UNICEF Maternal and neonatal tetanus elimination by 2005. [cited 10 september 2010]
- [4] Afridi NK, Hatcher J, Mahmud S, Nanan D, coverage and factor associated with tetanus toxoid vaccination status among females of reproductive age in Peshawar. J. coll physicians surg pak 2005;15:391-5
- [5] Hasnain S, Sheikh NH, causes of low tetanus toxoid vaccination coverage in pregnancy women in Lahore distt. PAKISTAN. East Mediterranean Health J 2007;13:1142-52.

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### Annexure 1

TETANUS TOXOID VACCINATION COVERAGE AND REASON FOR NON-VACCINATION AMONG FEMALES OF REPRODUCTIVE AGE

## QUESTIONNAIRE

Name of researcher:  
Class:  
Name of Respondent:  
Marital Since:  
Address:  
Education:  
Roll num:  
Date:  
Age:

Phone no:

	Illetrate	primary	Matriculation	Graduation	Post Graduate
Respondent					
Husband					

- Total no. of family members:
- No of Earning Members:
- Total Family Income/month:
- Income /capita/Month:
- Marital History:

Total children:  
Total live births:  
Total abortions:  
Total stillbirths:

Q1. Do you ever heard about disease tetanus?

a. Disease tetanus. yes No

b. Tetanus Neonatoum. Yes No

Q2. Do you have any idea about presence of vaccine for tetanus disease?

yes	No
-----	----

Q3. Do you know it is transmitted fom mother to new born?

yes	No
-----	----

Q4. Do you know it can be transmitted from unhygienic delivery practices and wound infection from soil?

yes	No
-----	----

Q5. Do you know it is preventable by administering vaccine?

yes	No
-----	----

Q6. Are you immunized against tetanus toxoid?

yes	No
-----	----

Q7. If yes, then have you completed the course of 5 injection?

yes	No
-----	----

Q8. If yes, from which health facility?

BHU	RHC	DISTRICT HOSPITAL	PRIVATE HOSPITAL

Q9. Immunization history of respondent during neonatal period?