Original Article

Tetanus-Toxoid Vaccination among Married Women of Reproductive Age (18-49) and its Association with Socio-demographic in Union Council Kamu Shaheed District Ghotki Sindh

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ABSTRACT

OBJECTIVE: To determine the factors in influencing for tetanus toxoid vaccination among married women of reproductive age group (18-49) of Ghotki Sindh.

METHODOLOGY: Descriptive cross-sectional study was conducted in UC Kamu-Shaheed, district Ghotki from May 2017 to October 2017. Total sample of reproductive age group women 18-49 years were 323 which was taken though systematic random sampling with confidence interval 0.5%. Results were taken by computing frequencies and association were analyzed through chi-squire.

RESULTS: Two hundred and one (62.2%) women and seventy one (22%) men (husbands of women) were illiterate. Seventy one (22%) respondents had no knowledge about Tetanus Toxoid vaccine, 292 (90.4%) respondents have received one or more doses of Tetanus toxoid vaccine. 293 (90.7%) respondents expressed that they had LHWs in their areas and 30 (9.3%) denied. 190 (58.8%) respondents expressed fear from injections. 43(13%) women were completely immunized (received all five doses of Tetanus toxoid), 31 (9.6%) women did not receive any Tetanus toxoid vaccination (zero dose). Variables like distance from home to health facility, education of women, fear of injection, and awareness regarding vaccine were significantly influencing Tetanus toxoid vaccination. Absence of vaccinator, absence of LHWs in the area and absence of female staff at the health facility were among top three influencing factors which scoring of 55%, 43.3%, and 39.3% respectively.

CONCLUSION: Lack of education, transport, access to health care facility, availability of practitioners, knowledge of tetanus and vaccination schedule, availability of vaccines are the factors affecting the introduction of tetanus toxoid in the body of pregnant women.

KEYWORDS: Reproductive age, Married women, Tetanus Toxoid, Vaccine, Child bearing age, immunization

This article may be cited as: Somoro AW, Ansari MI, Soomro GP, Aslam M, Ansari MS, Abro K. Tetanus-Toxoid Vaccination among Married Women of Reproductive-age (18-49) and its Association with Socio-demographic in Union Council Kamu Shaheed District Ghotki Sindh. J Liaquat Uni Med Health Sci. 2019;18(04):307-13.
doi: 10.22442/jlumhs.191840648

INTRODUCTION

Tetanus, commonly called lockjaw is caused by a bacterial toxin or poison that affects the nervous system of the body[1]. Infection spreads contact of any abrasion skin or dead tissue like wound or when the umbilical cord is cut[3]. Tetanus toxoid (TT) vaccine was first produced in 1924[4]. Neonatal tetanus in developing countries is 8-50%[5]. Tetanus Toxoid (TT) vaccination is suggested in the women of reproductive age group all over the world because it develops immunity against the tetanus[6]. To be fully protected against this curse and avoid transmission from mother to her newborn, a woman needs to take 5 doses of tetanus toxoid vaccine during her lifetime and this can be done over period of 3 years[1]. According to the data of WHO about 290,000 citizens worldwide passed away due to tetanus in 2004, in which comprising 257,000 belongs to newborn tetanus[7]. Pakistan is getting efforts to decrease death rates during pregnancy and infancy[8]. TT vaccination for pregnant woman became integrated by WHO Expanded Program on Immunization (EPI)[9].

In the United States of America, it is also observed that fewer cases are registered at the health facility for treatment[10]. One of the causes had to achieve Millennium Development Goals (MDGs) by the year 2015 and Sustainable Development Goals (SDGs) aims to maintain the same progress by dropping the global maternal deaths ratio to less than 70 per 100,000 live births[11]. Aim of study is to improve TT vaccination coverage among women of reproductive age group (18-49) and objective is to coverage of TT vaccination and to find association with socio

demographic in Union council Kamu Shaheed District Ghotki Sindh.

METHODOLOGY

Descriptive Cross-sectional study conducted in Union council Kamu Shaheed of District Ghotki Sindh from May 2017 - October 2017 on married child bearing age women (18-49 years). Systematic random sampling technique was used and sample size calculated on Prevalence Rate of Tetanus Disease (74%) N=323. Inclusion criteria were those women who were married in reproductive age (18-49) residing in Union council Kamu Shaheed for last 3 years and at least one pregnancy during her life, mentally unhealthy and widows were excluded. Data was collected by interviewing the married women of reproductive age group women, observing immunization record and in the absence of vaccination card data was taken by recalling and also was confirmed from LHWs' record. Tool were pre-tested on 10% and translated into local language (Sindhi), it was Pre-structured questionnaire and were used previously[12]. It is of socio-demographic profile and influencing factors for TT vaccination. Data was analyzed on SPSS 20 version. Ethical permission was taken from Institutional Review Board of HSA and written consent was taken from participants and confidentiality was maintained.

RESULTS

Sample size of three hundred twenty three women who were married and had at least one pregnancy in their life aged from 18 to 49 years. All (n=323) participants were agreed for participation, thus response rate remained 100%.

Socio-demographic

Frequencies of total respondents (women of reproductive age group 18-49 years), were categorized as; 18-25 were 104 (32.2%); 26-33 were 138 (42.7%); 34-41 were 60 (18.6%) and 42-49 were 21 (6.5%) **Table I**.

TABLE I: DEMOGRAPHIC AND POPULATION DYNAMICS STATISTICS

Age of women	Frequency	Percentage
18-25	104	32.2
26-33	138	42.7
34-41	060	18.6
42-49	021	6.5
Total	323	100.0
Occupation of women		
House wife	317	98.1
Employee	06	1.9
Total	323	100.0
Education status of women		
Illiterate	201	62.2
Primary	68	21.1
Middle	11	3.4
Metric	20	6.2
Above	23	7.1
Total	323	100.0
Occupation of husband		
Govt. Job	41	12.7
Private job	37	11.5
Skilled	122	37.8
Jobless	123	38.1
Total	323	100.0
Monthly income of husbands		
Less than 5000 PKR	59	18.5
More than 50001 PKR	108	33.4
Less than 10000 PKR	108	33.4
More than 10001 PKR	48	14.9
Total	323	100.0
Husband education		
Illiterate	71	22.0
Primary	69	21.4
Middle	43	13.3
Metric	72	22.3
Above	68	21.1
Total	323	100.0

Out of total 323 participants 317 (98.1%) were housewives and only 6 women were employee which is 1.9% of total participants. Monthly income status of women's husband was < 5000 for 59 (18.3%). Husbands' education status were as 71 (22.0%) uneducated and 69 (21.4%) were primary pass.

Influencing factors for tetanus toxoid vaccination

Out of 323 Status of women either who decide at home or not for themselves was as, you (women themselves) were 118(36.5%), your husband (husbands of women) were 174(53.9%) and your mother in law (mothers in law of women) were 31 (9.6%) Table II.

TABLE II: INFLUENCING FACTORS FOR TT VACCINATION

Who decides for health at home		
You	118	36.5
Your husband	174	53.9
Your mother in law	31	9.6
Total	323	100.0
Distance from house to health facility		
<2km	14	4.3
<5km	231	71.5
<10km	66	20.4
>10km	12	3.7
Total	323	100.0
Visits to hospital during pregnancy		
Yes	260	80.5
No	63	19.5
Total	323	100.0
Presence of female staff while visiting during pregnancy		
Yes	295	91.3
No	28	8.7
Total	323	100.0
Do you have any LHWs in your area		
Yes	293	90.7
No	30	9.3
Total	323	100.0
Does she visit regularly		
Yes	262	81.1
No	61	18.9
Total	323	100.0
Have you heard about neonatal tetanus?		
Yes	228	70.6
No	95	29.4
Total	323	100.0
Have you any knowledge about TT vaccine		
Yes	252	78.0
No	71	22.0
Total	323	100.0

Out of 323 women, distance of health facility to house was as <2 km were 14(4.3%), <5 km were 231(71.5%), <10 km were 66(20.4%) and >10 km were 12(3.7%). Women out of 227 who got information about vaccination was as, from media were 4(1.7%) Table III.

TABLE III: INFORMATION ASKED ABOUT TT

Knowledge about schedule of TT vaccine		
Yes	227	70.3
No	96	29.7
Total	323	100.0
From where you got information		
Media	31	9.6
Friend	00	00
Hospital	20	6.2
LHW	272	84.2
Total	323	100.0
Have you received injections		
Yes	292	90.4
No	31	9.6
Total	323	100.0
How many injection have you received?		
One	10	3.1
Two	107	33.1
Three	109	33.7
Four	24	7.4
Five	42	13.0
None	31	9,6
Total	323	100.0
From where you received these injections		
Govt. Hospital	272	84.2
Private hospital	00	00
Vaccinator	20	6.2
Not vaccinated	31	9.6
Total	323	100.0
Presence of vaccinator		
Yes	288	89.2
No	31	9.6
Don't know	4	1.2
Total	323	100.0

Presence of vaccine		
Yes	287	88.9
No	36	11.1
Total	323	100.0
Attitude of vaccinator		
Good	291	90.1
Not good	23	7.1
Don't know	9	2.8
Total	323	100.0
Have you fear about these injections		
No	133	41.2
Yes	190	58.8
Total	323	100.0
No of ANC visits during pregnancy		
One	25	7.7
Two	73	22.6
Three	53	16.4
Four	87	26.9
None	85	26.3
Total	323	100.0
Accessibility of TV or radio		
Yes	220	68.1
No	103	31.9
Total	323	100.0

ASSOCIATION IN-BETWEEN VARIABLES

Table IV shows result of association between variables and TT vaccine coverage, most of the variables were significant. For this chi-square was analyzed, p-value and confidence interval was computed. Alpha (0.05) was as the margin of error.

TABLE IV: ASSOCIATION IN-BETWEEN VARIABLES (DEMOGRAPHIC AND FACTORS ITEMS)

Variables	P-value	Results
Age women of reproductive group 18-25 Years 26-33 Years 34-41 Years 42-49 Years	.000	Association found
Occupation of women Housewife Employee	.022	No Association
Education of the women Illiterate Primary Middle Matric Above	.005	Association found
Husband occupation Govt Job Private Job Skilled Jobless	.006	Association found
Husband education Illiterate Primary Middle Matric Above	.000	Association found
Monthly income Less than 5000 PKR More than 50001 PKR Less than 10000 PKR More than 10001 PKR	.294	No Association

CI 95%, p-value 0.05

Age of women, education of women, occupation of husband, education of husband, Decision for health at home, How far health facility, Visit at hospital during pregnancy, Presence of lady doctor of LHV at health facility, Regularly visits of LHWs, Knowledge about TT vaccine, Knowledge of vaccination schedule, From where you received vaccination, Presence of vaccinator, Presence of vaccines, Fear of injection, No of ANC visits, and Accessibility of TV or radio had significant result except occupation of women and monthly income.

DISCUSSION

This study was conducted to determine influencing factors for TT vaccination among the women of reproductive age group. TT vaccination is given against the tetanus, WHO has recommended 90% target for vaccination coverage. Women education has significance influence on TT vaccination and a study conducted in Peshawar also supports in which it is shown that those women who were educated and had government job had more awareness and in those women TT coverage was high when we reviewed literature for our study Mother's education also represents strong positive significance with receiving two or more doses of TT injections[13]. Husband occupation also had significance influence on TT vaccination, women whose husbands who were

skilled or employee had higher percentage of TT vaccination, a study shows that in those women whose husbands had government job or skilled they had higher coverage for TT vaccine Immunization[12].

Distance of facility far from the house has also high significance influence on TT vaccination as shown in study of Bangladesh in which women were not vaccinated whose house was too far from health facility[16]. In a study conducted in Peshawar, women were not vaccinated due to far distance comparing with those whose home was far from health facility[12].

Presence of lady doctor or LHV or any female staff at the center also significantly influence on TT vaccination as study shows conducted in Peshawar Pakistan, in which it is shown that due to not presence of staff and non-availability of vaccine become the reason for less no of vaccination[8]. Present study shows that respondents, who said unavailability of lady doctor or LHVs, had lesser no of vaccination coverage than those women who said for presence of female staff they had greater no of vaccination coverage. Chi-squire test also shows an association according to its results, in which p-value is less than alpha (0.05) and confidence interval does not lies in between 1 confidence interval which shows a significance result and an association between presence of lady doctor or LHV at the facility and TT vaccine coverage and this study also supports to a previous study[13]. Presence of LHWs and their regular visits in the area also shows significance influence on the coverage of TT vaccination and it is also shown in the study of Peshawar Pakistan which supports this study[6].

Awareness about tetanus, TT vaccination and schedule of vaccination has shown significance influence on the coverage of TT vaccination, it is also shown in a study from Pakistan conducted at Tertiary care hospital and also shown in USAID's report that lesser no of women had vaccination coverage who were not aware about TT vaccination than those who had greater awareness which support present study[14,15]. Presence of vaccinator and vaccines at health facility has shown significance influence on TT vaccination coverage, a study from Pakistan Tertiary care hospital which shows that not presence of vaccinator and vaccines at health facility is one of the cause of low vaccination coverage which support present study[14].

Fear of injections showed a significance influence on TT vaccination, it is also shown in a study from Bangladesh in which it is shown that (24.6%) women were those who said that they had fear from injections[13]. 4.1% women were not vaccinated due to fear of injection it is shown in study from Peshawar which also supports present study[12]. Number of ANC visits plays a crucial role in the improvement of TT coverage as shown in study conducted in, which it is shown that more than three ANC visits improve the coverage for TT vaccination. Another study from Indonesia in which it is shown that those women who visited more for ANC, those women were 30 times more likely to vaccinate compared to those who did not have an antenatal care which support present study[16]. Accessibility of TV or radio also has a significance influence on TT coverage a study from Pakistan Peshawar shows the results that women who had access to TV/radio had higher immunization (66.4%) than those who did not have access to TV/ radio (23.2%). Similar findings were found in other studies conducted in Pakistan which shows 10% of women were not vaccinated due to non availability of TV or Radio, which support this study[12]. The present study also shows that respondents had not availability of radio or TV, they had lesser no of TT coverage than those who had availability of TV or radio as this is one of the source of awareness, chi-square results also show significant because p-value is less than 1 and C.I does not lies in between 1 CI, which show an association between accessibility of TV and TT vaccination.

CONCLUSION

Very low percentage of women were fully immunized (received all five doses of TT), and less than 10% women did not receive any T.T vaccination(zero dose) most the variables like distance from home to health facility, education of women, fear in injection, awareness, were significantly influencing TT vaccination but absence of vaccinator, absence of LHWs in the area and absence of female staff at the health facility were among top three influencing factors which scored 55%, 43.3%, and 39.3% respectively.

These issues have to be addressed, if any significant progress to maternal neonatal tetanus elimination is to be made. However it is concluded that in spite of these all facts, it is limited study and in a very limited area, for better results it needs broader studies.

LIMITATION

Study conducted in small union council which cannot be generalized for the nation and could be recall bias since the women were asked for their vaccination record who had not their vaccination cards.

RECOMMENDATION

As Pakistan has not achieved target of elimination for tetanus. In our research, we have concluded that there are so many factors which are influencing on TT vaccination coverage these factors are: Occupation of women, education status, distance from health facility, absence of lady doctors or LHVs at health facility, absence of LHWs in the in the area, irregular visiting of LHWs in the area, not knowledge about TT vaccination or tetanus, absence of vaccinator and vaccines at the health facility. Looking at these influencing factors, we recommend to improve literacy rate in particular of women, make sure for the presence of lady doctors or LHVs, Vaccinators and availability of vaccine at the health facilities. Training to LHWs for the counseling in the community about awareness and the importance of TT vaccines and tetanus, deployment of LHWS in the vacant areas, proper supply and store of vaccination under recommended temperature and also monitoring and supervision over the vaccination activities in those areas where vaccination coverage is low and surveillance is also recommended for tetanus, so that actions may be taken against in the time.

Ethical permission: Ministry of National Health Regulation and Coordination Services, Government of Pakistan approval letter dated: 23-05-2017.

Conflict of interest: Authors of the study have no conflict of interest to declare.

Funding: None.

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