Attitude of Women towards Tetanus Toxoid Vaccine in District Bhakkar Punjab Pakistan

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Tetanus is a staid disease that is caused by bacteria. Tetanus (lockjaw) results into painful tightening of the muscles in the whole body, which may leads to death in about 1 out of 10 cases. This vaccine works by exposing the patient to a small dose of the bacteria, which causes the body to develop immunity to the disease, the TT vaccine is administered to prevent disease in adults and children who are at least 7 years old. This academic research is basically aimed at measuring the attitude of women towards TT immunization. This research is conducted among women in some of the Union councils of BHAKKAR. This is done in connection with Education, status of Husband, and knowledge about TT. Chi-square test was used to measure the impacts of the demographic variables upon the research variables. To achieve the study objectives, six hypotheses were developed. The results show that there are no significant differences between the responses of rural & urban women about Education of TT. Likewise, the views of local & non local women regarding status of husband are same. On the other hand the views of local, non local, urban and rural women are different. Public health authorities should motivate the spouses about the importance of TT immunization to the eligible women. The study suggests that missed opportunities may be decreased by motivating the H.C.P. This study will also highlight problems/issues faced by the women and suggest few measures for the removal of these problems/issues.
Keywords: attitude of women, tetanus toxoid, Education, status of Husband, and knowledge about TT

1. INTRODUCTION

Tetanus is a staid disease that is caused by bacteria. Tetanus (lockjaw) results into painful tightening of the muscles in the whole body, which may leads to death in about 1 out of 10 cases (David et al., 2005). This vaccine works by exposing the patient to a small dose of the bacteria, which causes the body to develop immunity to the disease, the TT vaccine is administered to prevent disease in adults and children who are at least 7 years old (Pichichero et al., 2006; Fiorillo et al., 1999).

Tetanus is a serious problem throughout the world but especially in Pakistan, it is occurring in all ages, how it is more common in new borne babies and women. Death occurring due to this illness in developing countries is 135 times greater as compared to the developed countries (Roosihermiatie, 2000). TTI immunization coverage is still lower than the national target in District Bhakkar of the Punjab province of Pakistan. There may several factors which are responsible for this low coverage, yet one of these is the attitude of women towards TT immunization. It well known that Tetanus is the only infectious disease which is not only a non-communicable but also can be 100% eradicated (Wassilak et al, 2004). If full course of TT vaccination is administered to the women of CBA (child bearing age), this disease could be eradicated among the women of this age as well as among neonates (babies from birth to 28 days of age) (Pollard & Selby, 1978).

The worldwide deaths estimated from Tetanus round the globe are about 213,000 in 2002 and 198, 000 of them were children under five years of age, including neonatal Tetanus (Fiorillo et al., 1999). Pakistan is among the nine Asian countries which have failed to control neonatal Tetanus, a major cause of infant mortality in the country. Some studies in the past have tried to explore the knowledge and awareness about the two diseases among health professionals, but there is scarcity of data regarding the awareness of these diseases among the masses. People's perceptions about risk factors, seriousness and fatality of these diseases, importance of vaccination and post-exposure prophylaxis and affordability of vaccination is not well known to common man (Yuan et al., 1997) . As vaccines and post exposure prophylaxis are both available in Pakistan, the level of public awareness about the preventable and treatable aspect of these diseases and public perceptions and attitudes

towards vaccination and post-exposure prophylaxis are important factors in planning for effective interventional strategies. The objective of the study was to assess people's knowledge about predisposing factors for contracting Tetanus, seriousness, especially fatality, related to this diseases, availability and affordability of vaccines and post-exposure prophylaxis.
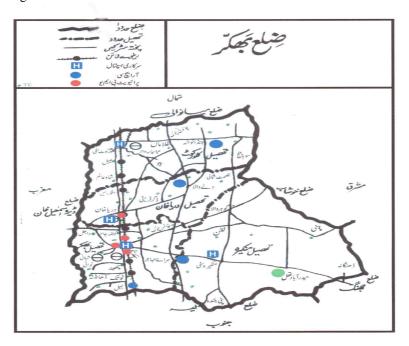
The study is carried out to test the significance of the determinants of women attitude towards TT vaccine and to compute the impacts of the demographics on the determinants of attitudes of women. The study also examined the factors affecting people's knowledge especially age, gender and level of education.

1.1 Problem Statement

This academic research is basically aimed at measuring the attitude of women towards TT immunization. This research is conducted among women in some of the Union councils of BHAKKAR. This is done in connection with Education, status of Husband, and knowledge about TT. This study will also highlight problems/issues faced by the women and suggest few measures for the removal of these problems/issues.

2.2 Significance of the Study

The study will help the public health authorities to formulate the policies about TT vaccination. The study will be helpful for the authorities to become aware of the deficiencies in immunization of women of child bearing age. This study will provide guidelines for the future researchers who want to conduct research on similar topics.

1.3 Main Research Hypothesis

H_{01}: The predictors of the study do not significantly determine the Women's attitude about TT.

2. LITERATURE REVIEW

Health plays the key role in determining the human capital, thus better health improves the efficiency and productivity of the human capital of any country which is essential for development in all sectors of the economy (APR of RMC & AH, 2008). According to the constitution of the Islamic Republic of Pakistan, provision of health care facilities is the responsibility of provincial governments except FATA. In Pakistan health care system is controlled at district level, which is an integrated system i.e. the primary level facilities include BHUs, RHCs and MCHCs. Likewise, government health functionaries reach the communities through different specifically developed and target programs with the help of lady health workers. THQs and DHQs have specialists and serve as referral centers.

2.1 TT (Tetanus Toxoid): Context

In medical terminology, there are two types of immunization i.e. Active and Passive, whereas, in active immunization, dead or alive but weakened microorganisms of same disease are injected to the patient (Green & Kreuter, 2000). A patient perception about quality of care is an important consideration in today's healthcare environment, for several reasons. First, the level of patient satisfaction may reflect the quality of care actually received and customer negative perception or dissatisfaction usually indicates poor quality. Second, it is essential for attracting patients in the highly competitive healthcare environment. Tetanus is a vaccine-preventable

disease that causes an annual total of 309 000 deaths (Kidane, 2004). Of particular concern is maternal and neonatal tetanus (MNT) which represents a triple failure of public health in terms of routine vaccinations, antenatal care and clean delivery/umbilical cord care services is a swift and painful killer that killed about 200 000 newborns in year 2000 (Pascual et al., 2003).

The goal of MNT elimination was declared jointly by the United Nations Children's Fund (UNICEF), the World Health Organization (WHO) and the United Nations Population Fund (UNFPA) along with the establishment of a global fund for MNT elimination is defined as the achievement of less than 1 case of neonatal tetanus per 1000 live births annually in every district of a country in the world (Martin-Munoz et al., 2002).

The three key strategies for achieving MNT elimination recommended by WHO/UNICEF/UNFPA are: provision of at least 2 doses of tetanus toxoid (TT2) to all pregnant women in high risk areas and 3 doses (TT3) to all women of childbearing age, besides, promotion of clean delivery services to all pregnant women and ensuring effective surveillance for MNT (National Advisory Committee on Immunization, 2005). There is a renewed momentum to achieve MNT elimination in the 57 countries which have not yet done so. However, 90% of the neonatal deaths occur in 27 of the 57countries (National Advisory Committee on Immunization, 2007). Pakistan is one of the 8th high burden countries which account for about73% of neonatal tetanus deaths. In Pakistan, 22 000 neonatal deaths occur every year due to MNT (Mayaud et al., 1999).

In most of the developing countries, maternal TT vaccination is implemented as part of the routine vaccination programs implemented as a supplemental activity. However, large areas remain underserved due to logistic, cultural, economic or other reasons. The 57 countries were ranked in June into A, B and C classes. Pakistan is included in class C as more than 50% of the districts are at high risk for MNT because of the limited health infrastructure which is indicated by 50% or lower coverage of the third dose of diphtheria /pertussis/tetanus (DPT3) (McQuillan et al., 2002). There are extremely wide variations in TT Vaccination coverage from district to district in Pakistan even when they are in close Proximity. The delivery and acceptance of recommended vaccinations is an ongoing Challenge for health care providers and health care and public health systems in Pakistan in general and Punjab in particular. Reducing the burden of immunizable diseases is thus an important aspect of human capital development and a critical investment in the future of the country.

The information system of the Expanded Program on Immunization (EPI) is reporting around 80% of the coverage of children and about 38% of the TT2 coverage of pregnant mothers in the province of Punjab .There is also variations in TT coverage even across the provinces of Pakistan. In a study conducted in Peshawar district of Khyber Pakhtunkhwa of Pakistan, 65% of women in urban areas were vaccinated, while in rural areas 60% were vaccinated. Females in the urban area were older and had more knowledge regarding vaccination than females in the rural areas. More women in the urban areas had made antenatal care visits (79%) than those in rural area (50%). Despite considerable resources being invested into the routine EPI program in Pakistan, there is no or very slow improvement in the TT coverage among the pregnant women with the supplementary immunization activities. The routine reporting System of EPI is supplemented by the coverage evaluation survey, the focus of which is basically only on coverage. However, little or no research has been done to analyze the causes of low TT coverage of pregnant women in Pakistan. The percentage for children receiving three doses of Tetanus vaccine in South Asia is only 58%, whereas, large number of neonatal deaths in Pakistan require an aggressive approach to tackle the disease. Awareness is directly related to vaccine coverage. Studies have shown that higher knowledge among people or community awareness is associated with increased vaccination coverage.

A report has been presented about TT coverage in the Lahore district of Pakistan and to understand the reasons for low coverage at various levels. It could be observed from the report that TT coverage was not provided to 362 mothers out of 1000 who had delivered within the last three months. Although TT2 coverage among these mothers was relatively high, and is much higher than the previous coverage which was 62%, yet only 17% of the women achieved a complete series of 5 injections, which is well below the WHO expected level of vaccination of 100% of the pregnant women.
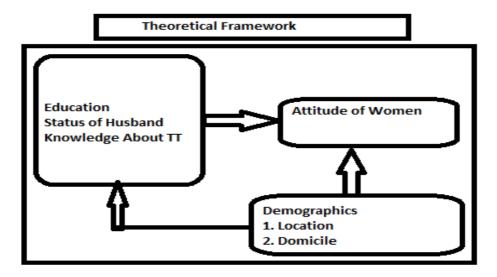
2.2 Description of the Variables

Variables	Definitions
Education	The act or process of imparting or acquiring generally of preparing oneself or others intellectually for mature life.
Status of husbands	The rights and obligations of the husband regarding his spouse
Knowledge	The state or fact of knowing.

2.3 Theoretical Framework

Based on literature review and extracted variables, below is the schematic diagram of the theoretical framework of this sturdy:

Theoretical Framework

2.4 *List of Sub-Hypotheses*

The proposed hypothesis of the study given below is the outcome of the theoretical framework presented above.

H_{01}: There is no difference between the views of urban and rural women regarding TTI vaccination.

H_{02}: Local and non-local women have different attributes toward TTI vaccination.

H_{03}: There is no difference between the views of Urban and Rural women regarding Status of Husband.

H_{04}:.There is no difference between the views of Urban and Rural women regarding knowledge (about TT Vaccine).

H_{05}.There is no difference between local and non-local women regarding status of Husband.

H_{06}: There is no difference between the views of local and Non Local women about knowledge of TT vaccine

3. RESEARCH DESIGN

A research methodology is set up to decide on among other issue how to collect further data, analyze and interpret those data and, finally to provide an answer to the problem (Sekaran, 1999: 28). The population of this study consists of all women from two different union councils (one urban and one rural), where 100 respondents were selected through convenience sampling technique. The primary data was collected through questionnaire and the secondary data was collected through all available material from books, newspaper and online resources. The data collected was analyzed using different descriptive analytical methods particularly, simple percentage and average method and X^2 was used to test the hypotheses.

4. FINDINGS AND DISCUSSION

Data analysis is a process of gathering, modeling, and transforming data with the goal of highlighting useful information, suggesting conclusions, and supporting decision making. Below tables give a picture of the demographic characteristics of the sample as well as the results of the inferential analyses.

4.1 Demographic Profile of the Respondents

Area wise breakdown of the respondents

Status	Frequency	% age
Urban	50	50
Rural	50	50
Total	100	100

Location - wise breakdown of the respondents

Status	Frequency	% age
Local	58	58
Non-Local	42	42
Total	100	100

4.2 Hypotheses Testing

The evidence in the favor of or against the hypotheses pinpoints the reality of the survey study. One main hypothesis and twelve sub hypotheses have been developed and tested through the application of chi square test. The results and their interpretations are discussed below.

H_{01}: There is no difference between the views of Urban and Rural women regarding Education about TT-Vaccine.

CONTINGENCY TABLE

OBSERVED FREQUENCIES

TOTAL(RT)	NO	YES	Status
50	16	34	Urban
50	15	35	Rural
100	31	69	TOTAL(CT)

EXPECTED FREQUENCIES

TOTAL	NO	YES	GENDER
50	15.5	34.5	Urban
50	15.5	34.5	Rural
100	31	69	TOTAL

CHI-SQUARE TEST- STATISTICS

(Fo-Fe)2/Fe	(Fo-Fe)2	(Fo-Fe)	Fe	Fo	
0.0007	0.25	-0.5	34.5	34	
0.016	0.25	0.5	15.5	16	
0.0007	0.25	0.5	34.5	35	
0.016	0.25	-0.5	15.5	15	
0.0334	1	0	100	100	TOTAL(GT)

$$\sum 0.0334$$

Analysis

Since both the variables are nominal hence the chi-square test was used to check the association between the Urban and Rural women. Using the level of significance of 0.05, the tabulated value of X^2 for 1 degree of freedom is 3.84. The calculated value of X^2 is 0.0334. Since the calculated value is less than the tabulated value. Hence $H_0 1$ is accepted.

H_{02}: Local and Non-Local women have same opinion regarding Education about the TT-Vaccine.

CONTINGENCY TABLE

OBSERVED FREQUENCIES

TOTAL(RT)	NO	YES	Location
58	23	35	Local
42	08	34	Non-Local
100 - (GT)	31	69	TOTAL(CT)

EXPECTED FREQUENCIES

TOTAL(RT)	NO	YES	Location
58	17.98	40.02	Local
42	13.02	28.98	Non-Local
100	31	69	TOTAL(CT)

CHI-SQUARE TEST STATISTICS

(Fo-Fe)2/Fe	(Fo-Fe)2	(Fo-Fe)	Fe	Fo	
0.63	25.2004	-5.02	40.02	35	
1.402	25.2004	5.02	17.98	23	
0.87	25.2004	5.02	28.98	34	
1.94	25.2004	-5.02	13.02	08	
4.842	100.8016	0.0	100	100	TOTAL(GT)

$$\sum 4.842$$

Analysis

Since both the variables are nominal hence the chi-square test was used to check the association between the Local and Non-Local women. Using the level of significance of 0.05, the tabulated value of X^2 for 1 degree of freedom is 3.84. The calculated value of X^2 is 4.842. Since the calculated value is greater than the tabulated value. Hence H_{02} is rejected which shows that there is a difference between Local and Non-Local women responses regarding Education about TT-Vaccine.

H_{03}: There is no difference between the views of Urban and Rural women regarding Status of Husband.

CONTINGENCY TABLE

OBSERVED FREQUENCIES

TOTAL(RT)	NO	YES	Location
50	28	22	Urban
50	16	34	Rural
100	44	56	TOTAL(CT)

EXPECTED FREQUENCIES

TOTAL(RT)	NO	YES	Location
50	22	28	Urban
50	22	28	Rural
100	44	56	TOTAL(CT)

CHI-SQUARE TEST STATISTICS

(Fo-Fe)2/Fe	(Fo-Fe)2	(Fo-Fe)	Fe	Fo	
1.2857	36	-6	28	22	
1.2857	36	6	28	34	
1.6363	36	6	22	28	
1.6363	36	-6	22	16	
5.82					TOTAL(GT)

$$\sum 5.82$$

Analysis

As both the variables were nominal, so chi-square test was used to check the association between the gender and results. Using the level of significance of 0.05, the tabulated value of X^2 for 1 degree of freedom is 3.84. The calculated value of X^2 is 5.82. Since the calculated value is greater than the tabulated value. Hence we reject the null hypothesis (H_{03}). Which means there is difference between the rural and urban women responses regarding the status of husband?

H_{04}: There is no difference between the views of Urban and Rural women regarding knowledge (About TT Vaccine).

CONTINGENCY TABLE

OBSERVED FREQUENCIES

TOTAL(RT)	NO	YES	Location
50	32	18	Urban
50	17	33	Rural
100	49	51	TOTAL(CT)

EXPECTED FREQUENCIES

TOTAL(RT)	NO	YES	Location
50	24.5	25.5	Urban
50	24.5	25.5	Rural
100	49	51	TOTAL(CT)

CHI-SQUARE TEST STATISTICS

(Fo-Fe)2/Fe	(Fo-Fe)2	(Fo-Fe)	Fe	Fo	
2.20	56.25	-7.5	25.5	18	
2.20	56.25	7.5	25.5	33	
2.29	56.25	7.5	24.5	32	
2.29	56.25	-7.5	24.5	17	
8.98					TOTAL(GT)

$\sum$ **8.98**

Analysis

Since both the variables are nominal hence the chi-square test was used to check the association between the gender and results. Using the level of significance of 0.05, the tabulated value of X^2 for 1 degree of freedom is 3.84. The calculated value of X^2 is 8.98. Since the calculated value is greater than the tabulated value. Hence we reject the null hypothesis (H_{04}). This means there is difference between the rural and urban women responses regarding the knowledge about TT Vaccine.

H_{05}: There is no difference between local and non local women regarding status of husband.

CONTINGENCY TABLE

OBSERVED FREQUENCIES

TOTAL(RT)	NO	YES	DOMICILE
58	28	30	LOCAL
42	13	29	NON LOCAL
100	41	59	TOTAL(CT)

EXPECTED FREQUENCIES

TOTAL(RT)	NO	YES	DOMICILE
58	23.78	34.22	LOCAL
42	17.22	24.78	NON LOCAL
100	41	59	TOTAL(CT)

CHI-SQUARE TEST STATISTICS

(Fo-Fe)2/Fe	(Fo-Fe)2	(Fo-Fe)	Fe	Fo	
0.52	17.8084	- 4.22	34.22	30	
0.71	17.8084	4.22	24.78	29	
0.74	17.8084	4.22	23.78	28	
1.03.	17.8084	-4.22	17.22	13	
					TOTAL(GT)

$\sum$3

Analysis

The chi-square test was used to check the association between local and Non Local women regarding status of husband. Using the level of significance of 0.05, the tabulated value of X^2 for 1 degree of freedom is 3.84. The calculated value of X^2 is $\sum$3. Since the calculated value is less than the tabulated value. Hence we accept the null hypothesis (H_{05}), which means that there is no difference between local and non local women regarding the status of husband about the views of TT.

H_{06}: There is no difference between the views of local and Non Local women about knowledge of TT vaccine.

CONTINGENCY TABLE

OBSERVED FREQUENCIES

TOTAL(RT)	NO	YES	DOMICILE
57	29	28	LOCAL
43	19	24	NON LOCAL
100	48	52	TOTAL(CT)

EXPECTED FREQUENCIES

TOTAL(RT)	NO	YES	DOMICILE
57	27.36	29.64	LOCAL
43	20.64	22.36	NON LOCAL
100	48	5	TOTAL(CT)

CHI-SQUARE TEST STATISTICS

(Fo-Fe)2/Fe	(Fo-Fe)2	(Fo-Fe)	Fe	Fo	
0.090	2.68	-1.64	29.64	28	
0.19	2.68	1.64	22.36	24	
0.097	2.68	1.64	27.36	29	
0.129	2.68	-1.64	20.64	19	
					TOTAL(GT)

$$\sum 0.435$$

Analysis

The chi-square test was used to check the association between the Domicile and knowledge about TT vaccine. Using the level of significance of 0.05, the tabulated value of X^2 for 1 degree of freedom is 3.84. The calculated value of X^2 is 0.435. Since the calculated value is less than the tabulated value. Hence we accept the null hypothesis (H_{06}).

This research was conducted to measure the attitude of women toward Tetanus Toxoid vaccine in District Bhakkar. The quantitative data was collected about the different variables such as education of women, status of husband and knowledge about TT vaccine. The data gave varied results on these variables; however, based on the review of the previous studies and results of this study, the study revealed that there is no difference between the views of urban and rural women regarding education of TT vaccine. The results of the study also show that the views of local and non local women about TT vaccine are different. The study also highlights that there is difference of views between urban and rural women regarding the status of husband. The results of this research study also portray that rural women have relatively less knowledge about TT vaccine than urban. Chi-square results also show that there is no difference between local and non local women about knowledge of TT vaccine. Findings also reveal that there is no difference of views between local and non local women about status of husband.

5.   CONCLUSIONS & SUGGESTIONS

Chi-square test was used to measure the impacts of the demographic variables upon the research variables. To achieve the study objectives, six hypotheses were developed. The results show that there are no significant differences between the responses of rural & urban women about Education of TT. Likewise, the views of local &non local women regarding status of husband are same. On the other hand the views of local, non local, urban and rural women are different. Public health authorities should motivate the spouses about the importance of TT immunization to the eligible women. Lady Health Workers & S.H & N.S of the District should be given the task of health education sessions in the community. Refresher courses of H.C.P may be conducted in D.H.D.C Bhakkar for uplifting their knowledge about TT. Missed opportunities may be decreased by motivating the H.C.P.

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