

Original Research Article

KAP Regarding TT Immunization during Pregnancy among Mothers of Children Attending the Immunization Clinic at a Tertiary Care Hospital in Kashmir Valley: A Cross Sectional Study

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Abstract: Immunization is one of the most cost effective interventions to prevent the suffering that comes from avoidable sickness, disability and death. However, vaccine preventable diseases continue being a major cause of morbidity and mortality worldwide, owing to weak immunization systems and practices. Even after the inception of the maternal and neonatal tetanus elimination initiative, 18 countries had yet to achieve elimination status at the end of 2016. It, therefore, becomes imperative to study the knowledge among mothers regarding the importance of tetanus toxoid administration during pregnancy, their attitude towards it and the actual practical implementation of these combined. Knowledge, attitude and practices concerning immunization among 275 mothers of children aged 6 weeks – 2 years were assessed by administering a semi-structured questionnaire to each of the participants at the immunization centre of SKIMS MC, a tertiary care hospital, from December 2016 till March 2017. A statistically significant association was found to occur between age group and whom the participants thought TT protected. Age group was also found to have a significant association with knowledge pertaining to ideal number of doses of TT to be received during pregnancy and space between two successive pregnancies. Literacy was observed to have a statistically significant association with knowledge regarding ideal number of TT doses to be received. Socioeconomic status as well as occupation of the participants was found to have a statistically significant association with knowledge regarding TT immunization during pregnancy. Even though Maternal and Neonatal Tetanus has been eliminated from India, concerted and sustained efforts to prevent resurgence are of utmost importance. Educating the primary care providers of children in this regard will prove to be one of the most efficient steps in this direction while also enabling women to protect themselves from this disease. The importance of IEC activities and BCC in this regard cannot be over-emphasized and concrete measures to ensure this need to be put in to effect.

Keywords: Mothers, knowledge, attitude, practices, tetanus, pregnancy.

INTRODUCTION

Immunization is a basic and an important practice which prevents against childhood diseases. Globally 1.5 million children die every year from vaccine preventable diseases, and most of these deaths occur in the developing countries. Immunization currently averts an estimated 2 to 3 million deaths every year. An additional 1.5 million deaths could be avoided, however, if global vaccination coverage improves. Infant mortality will also decline [1]. Expanded programme on immunization (EPI) targets diseases that are some of the leading causes of high childhood

morbidity and mortality as evidenced by high IMR (Infant mortality rate) in developing countries. According to the Child Health Epidemiology Reference Group (CHERG) estimates from 2008, an estimated 59,000 newborns die of neonatal tetanus each year. This translates into around 164 deaths in children under one month of age every day or one death every 9 minutes. Several thousand mothers are also estimated to die of maternal tetanus [2].

Around 49 000 newborns died of neonatal tetanus in 2013 (1% of all neonatal deaths) as compared

to around 200 000 deaths (7% of newborn deaths) in the year 2000. Number of countries that have not eliminated maternal and neonatal tetanus has come down from 59 in 2000 to 19 in 2016. Augmentation of supplementary immunization activities under MNTE initiative has led to vaccination of more than 170 million women of reproductive age [3].

In 1988, 11 849 cases of neonatal tetanus were reported from India while only 492 were reported in 2014 (95.8% reduction) [4]. India was declared free of maternal and neonatal tetanus on 15th May, 2015. Unlike measles and polio which are amenable to eradication, it is impossible to eradicate tetanus as the tetanus spores cannot be completely removed from the environment [5]. Therefore, we need to make sustained efforts to maintain the tetanus elimination status.

A Cochrane systematic review suggests that a two or three dose course of tetanus toxoid to pregnant mothers provides protection against neonatal deaths [6]. Tetanus vaccination of pregnant women was included in India's National Immunization Policy in the year 1983. According to NFHS-3 data (2005-06), around 82% of pregnant women registered for antenatal care were receiving second dose of tetanus toxoid or booster [7].

The routine immunization in India is a part of the NRHM and is administered by the MoHFW. The vaccination coverage statistics of India are far from satisfactory. According to the WHO, the coverage of DTP3 and TT2 of India in 2013 was 83% and 61%, respectively [4]. According to Coverage Evaluation Survey 2009 conducted by UNICEF, the most common reasons for partial or no immunization were that the people did not realize the need for vaccination and also did not know about the vaccines [8]. In order to sustain maternal and neonatal tetanus elimination status in India, routine immunization coverage will have to be strengthened. This can be done by augmenting IEC activities, ensuring adequate cold chain facilities, deployment of adequate number of medical and paramedical personnel for immunization, ensuring vaccine safety, monitoring for adverse events following immunization (AEFIs), and surveillance of vaccine preventable diseases (VPDs).

Keeping this background in consideration, a KAP prevalence study among mothers regarding TT immunization during pregnancy is relevant as it would prove pivotal in planning IEC activities.

MATERIALS AND METHODS

Study Area: The study was conducted in immunization clinic of SKIMS-MCH, a tertiary care hospital of the Kashmir Valley.

Study Design: Cross-sectional study design was adopted.

Study Period: The study was conducted over a period of six months from December 2016-May 2017.

Study Participants: Mothers of children attending immunization clinic at SKIMS MC and Hospital.

Sample Size: 275 mothers

Method of data collection: Data was collected using a semi-structured, predesigned and pretested questionnaire after obtaining informed consent and assuring the participants of full confidentiality.

Statistical Analysis: Data was analyzed using SPSS v. 20. Appropriate statistical tests were applied and p values <0.05 were considered significant.

RESULT

Among the study participants aged ≤ 29 years placed at **Table I**, 56.4% felt TT protects both the mother and the child, 40.1% believed it was beneficial only to the child. A further 2.6% thought it to be beneficial to the mother only. These percentages were 65.3%, 28.4% and 6.3% respectively among participant's ≥ 30 years and the difference was not statistically significant. 57.3% of study participants ≤ 29 years and 77.2% of participants ≥ 30 years opined that ideal number of doses during pregnancy are 2 & this association was statistically significant (p Value <0.001). Significant association was found between space between pregnancies and age group (p Value < 0.001) with 76.3% of women ≥ 30 years having a space of ≥ 3 years in between pregnancies in comparison to 39% of women ≤ 29 years of age. Of the multiparous cohort of the study population, 73% of those aged ≥ 30 years had received 2 doses of TT and 13.1% had received ≥ 3 doses of TT during the previous pregnancy. In comparison, 56% of those aged ≤ 29 years had received 2 doses of TT whereas 32% had received ≥ 3 doses during the previous pregnancy. This difference was found to be statistically significant (p Value 0.030).

Among the study participants, 59% of illiterates and 71% of literates opined that ideal number of TT doses during pregnancy is two and the difference was found to be statistically significant (p Value 0.036). The relevant details are depicted in **Table II**.

As far as KAP and socioeconomic status is concerned, the details are illustrated in **Table III**. A review of the table shows that of the study population, none of the mothers belonging to households with a per capita monthly income \leq 2651 rupees thought that TT immunization was beneficial to the mother. This percentage was 6.5% among mothers belonging to households with a per capita monthly income \geq 2652 rupees and this difference was statistically significant (p Value 0.048). 80% of mothers belonging to households

with a per capita monthly income \geq 2652 rupees believed the ideal number of TT doses during pregnancy to be 2 as opposed to 39.9% of mothers belonging to households with a per capita monthly income \leq 2651 rupees, a difference found to be statistically highly significant (p Value <0.001). No significant association was found between SES and TT immunization during previous pregnancies.

Regarding association of KAP with the occupation of the study participants as is placed in **Table IV**, it shows that among the study participants, 58.3% of homemakers were of the opinion that TT during pregnancy protects both child and mother as against 84.8% of employed mothers and the association was statistically significant (p Value 0.021).

Table-1: KAP and Age Group

Parameter		Age Group				Total		P-value
		≤ 29 years		≥ 30 years		N	%	
		N	%	N	%			
Whom does TT protect	Mother	3	2.6	10	6.3	13	100	0.055
	Child	47	40.1	45	28.4	92	100	
	Both	66	56.4	103	65.3	169	100	
	Do not know	1	0.9	0	0	1	100	
Ideal number of doses	1	3	2.6	0	0	3	100	<0.001
	2	67	57.3	122	77.2	189	100	
	≥ 3	33	28.1	28	17.8	61	100	
	Do not know	14	12	8	5	22	100	
Total		117	100	158	57.5	275	100	
Whether TT during previous pregnancy	Yes	50	92.2	106	93	156	100	0.199
	No	2	3.9	9	7	11	100	
	Not sure	2	3.9	0	0	1	100	
Number of doses received during previous pregnancy	1	2	4	3	2.5	4	100	0.030
	2	30	56	83	73	113	100	
	≥ 3	17	32	15	13.1	32	100	
	Don't remember	4	8	4	3.4	7	100	
Space between pregnancies	<3 years	33	61	27	23.7	60	100	<0.001
	≥ 3 years	21	39	87	76.3	108	100	
Total		54*	100	114	100	168*	100	

Table-2: KAP and Literacy Status

	Literacy status	Total	
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Parameter		Illiterate		Literate				p-value
		N	%	N	%	N	%	
Whom does TT protect	Mother	2	4	11	5	13	4.7	0.259
	Child	23	45	69	30.8	92	33.5	
	Both	26	51	143	63.8	169	61.5	
	Do not know	0	0	1	0.4	1	0.3	
Ideal number of doses	1	0	0	3	1.3	3	1	0.036
	2	30	59	159	71	189	68.7	
	≥3	19	37.3	42	18.7	61	22.3	
	Do not know	2	3.7	20	9	22	8	
Total		51	100	224	100	275	100	
Whether TT during previous pregnancy	Yes	35	94.6	121	92.4	156	92.9	0.199
	No	1	2.7	10	7.6	11	6.5	
	Not sure	1	2.7	0	0	1	0.6	
Number of doses received during previous pregnancy	1	2	5.6	2	1.7	4	2.6	0.095
	2	21	58.3	92	76.6	113	72.4	
	≥3	11	30.5	21	17.5	32	20.5	
	Don't remember	2	5.6	5	4.2	7	4.5	
Space between pregnancies	≤3	14	37.8	46	35.1	60	35.7	0.846
	≥3	23	62.2	85	64.9	108	64.3	
Total		37	100	131	100	168	100	

Table-3: KAP and Socioeconomic Status

Parameter		SES				Total		p-value
		≥Rs. 2652		≤Rs. 2651				
		N	%	N	%	N	%	
Whom does TT protect	Mother	13	6.5	0	0	13	4.7	0.048
	Child	62	31.5	30	38.5	92	33.4	
	Both	121	61.5	48	61.5	168	61.5	
	Do not know	1	0.5	0	0	1	0.4	
Ideal number of doses	1	3	1.5	0	0	3	1	<0.001
	2	157	80	32	39.9	189	68.8	
	≥3	26	13.2	35	45	61	22.2	
	Do not know	11	5.3	11	14.1	22	8	
Total		197	100	78	100	275	100	
Whether TT during previous pregnancy	Yes	103	94	53	91.4	156	93	0.684
	No	6	5.4	5	8.6	11	6.5	
	Not sure	1	0.6	0	0	1	0.5	
Number of doses received during previous pregnancy	1	2	1.9	6	10.4	8	1.4	0.059
	2	87	79	34	58.6	113	67.3	
	≥3	16	14.5	16	27.5	32	19	
	Don't remember	5	4.6	2	3.5	7	2.3	
Space between pregnancies	≤3	34	31	26	45	60	36	0.063
	≥3	76	69	32	55	108	64	
Total		110	100	58	100	168	100	

Table-4: KAP and Occupation

	Occupation	Total
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Parameter		Employed		Home-maker				p-value
		N	%	N	%	N	%	
Whom does TT protect	Mother	0	0	13	5.4	13	4.7	0.021
	Child	5	15.2	87	36	92	33.4	
	Both	28	84.8	141	58.3	169	61.5	
	Do not know	0	0	1	0.3	1	0.4	
Ideal number of doses	1	0	0	3	1.2	3	1	0.112
	2	29	87.9	160	66.2	189	68.8	
	≥3	3	9.1	58	24	61	22.2	
	Do not know	1	3	21	8.6	22	8	
Total		33	100	242	100	275	100	
Whether TT during previous pregnancy	Yes	14	100	142	92.2	156	93	0.635
	No	0	0	11	7.2	11	6.5	
	Not sure	0	0	1	0.6	1	0.5	
Number of doses received during previous pregnancy	1	0	0	4	2.5	4	1.4	0.542
	2	13	93	100	64.9	113	67.3	
	≥3	1	7	31	20.1	32	19	
	Don't remember	0	0	7	4.5	7	2.3	
Space between pregnancies	≤3	2	14.3	58	37.6	60	36	0.142
	≥3	12	85.7	96	62.4	108	64	
Total		14	100	154	100	168*	100	

DISCUSSION

Among the study participants 66 mothers in the age group ≤29yrs opined that TT protects both mother and child whereas 103 mothers aged ≥30 years were of the same opinion. 57.3% of mothers aged ≤29yrs opined that ideal number of doses during pregnancy were 2 whereas it was 77.2% among mothers aged ≥30 years and the association was statistically significant. The findings were similar to a study conducted by Rahman and Nessa (2000) ⁹ where mothers felt that 2 or 3 doses of TT are required during pregnancy.

66.8% of literates and 51% of the illiterates were of the opinion that TT protects both mother and child and the association was found to be statistically insignificant. Literacy status didn't seem to have any impact on the knowledge of TT immunization. Findings were similar to a study conducted by Emmelia Chilesheha¹⁰ where education had no importance on TT immunization.

In our study, it was observed that none of the mothers belonging to households with a per capita monthly income ≤ 2651 rupees thought that TT immunization was beneficial to the mother. This percentage was 6.5% among mothers belonging to households with a per capita monthly income ≥ 2652 rupees and this difference was statistically significant.

80% of mothers belonging to households with a per capita monthly income ≥ 2652 rupees believed the ideal number of TT doses during pregnancy to be 2 as opposed to 39.9% of mothers belonging to households with a per capita monthly income ≤ 2651 rupees, a difference found to be statistically highly significant.

In a study by Kumar A. *et al* [11], adequate knowledge regarding immunization was found among 40.2% of participants belonging to the middle socioeconomic class followed by 36.1% of the participants of the lower class and 28.6% participants of the upper class.

CONCLUSION

India has successfully attained maternal and neonatal tetanus elimination status through a long and arduous journey. The task of maintaining this status is an even more onerous and challenging one and will require political commitment as well as community involvement and social mobilization. Routine immunization services need to be strengthened and beneficiaries have to be empowered to utilize these facilities. This can be achieved by imparting health education and aiming towards transforming attitudes and practices regarding tetanus immunization during pregnancy.

REFERENCES

1. Zumla A, George A, Sharma V, Herbert RH, of Ilton BM, Oxley A, Oliver M. The WHO 2014 global tuberculosis report—further to go. *The Lancet Global Health*. 2015 Jan 31; 3(1):e10-2.
2. Unicef. UNICEF Annual Report 2010. UNICEF; 2011.
3. World Health Organization. International statistical classification of diseases and related health problems. World Health Organization; 2004.
4. World Health Organization. International statistical classification of diseases and related health problems. World Health Organization; 2004.
5. Bairwa M, Rajput M, Khanna P, Malik JS, Nagar M. India is on the way forward to maternal and neonatal tetanus elimination!. *Human vaccines & immunotherapeutics*. 2012 Aug 1; 8(8):1129-31.
6. Demicheli V, Barale A, Rivetti A. Vaccines for women for preventing neonatal tetanus. *The Cochrane Library*. 2015 Jan 1.
7. Lahariya C, Khandekar J. How the findings of national family health survey-3 can act as a trigger for improving the status of anemic mothers and undernourished children in India: a review. *Indian journal of medical sciences*. 2007 Sep 1; 61(9):535.
8. Delhi N. Ministry of Health and Family Welfare, Government of India; 2010. Burden of disease in India, Background papers for the National Commission on Macroeconomics. 2009.
9. Rahman S, Nessa F, Ali R, Ali HA. Reproductive health of adolescents in Bangladesh. *International Journal of Gynecology & Obstetrics*. 1989 Aug 1; 29(4):329-35.
10. Maimbolwa M, Ahmed Y, Diwan V, Arvidson AB. Safe motherhood perspectives and social support for primigravidae women in Lusaka, Zambia. *African journal of reproductive health*. 2003 Sep 1; 7(3):29-40.
11. Kumar A, Unnikrishnan B, Rekha T, Mithra P, Kumar N, Kulkarni V, Ramesh Holla DB. Awareness and attitude regarding breastfeeding and immunization practices among primigravida attending a tertiary care hospital in southern India. *Journal of clinical and diagnostic research: JCDR*. 2015 Mar; 9(3):LC01.