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Point Prevalence of Tetanus Toxoid Immunization among pregnant women attending Remera, Masaka and Kabuga health centers in Kigali city, Rwanda.

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Abstract

Vaccination has resulted in significant reductions in the prevalence and deaths of several illnesses, particularly among infants, lowering the newborn mortality rate. The immunization of mothers with TT vaccine is considered as major strategy for preventing maternal and neonatal death during childbirth. The main purpose for the present study was to determine the point prevalence of tetanus immunization coverage among pregnant women attending Remera, Masaka and Kabuga health centers, in Kigali city, Rwanda. The cross-sectional study was conducted utilizing quantitative approach. With the convenience sampling technique, the sample size of 245 pregnant women aged 15 -49 years was taken. Structured questionnaire was used to get data from respondents. The analysis was done using SPSS version 2021. The current study findings revealed that 69% of pregnant women received two or more Tetanus toxoid vaccination shots. In conclusion, the point prevalence of tetanus toxoid immunization among mothers attending Remera, Masaka and Kabuga health centers was low. Hence, Remera, Masaka and Kabuga health centers should reinforce health education and organize immunization campaigns in order to increase awareness of mothers on importance of TT immunization.

Keywords: Point prevalence, Tetanus toxoid, Immunization, Pregnant women

1.1 Introduction

Every year, almost 3.3 million newborn deaths are reported around the world, with approximately 9,000 infants dying every day in their first 28 days whereby neonatal tetanus is responsible for a large percentage of these deaths, with the WHO estimating that 34,019 newborns died from the disease in 2015(WHO,2018).

Vaccines are crucial in the battle against a wide range of infectious diseases (Karim et al., 2019). Vaccination has resulted in significant reductions in the prevalence and fatality of numerous illnesses, particularly among infants, lowering newborn mortality rates (UNICEF,2015).

Tetanus toxoid vaccine is an inactivated toxin created in 1924 and made available to the general population in 1938 (WHO, 2012).

The ladies of reproductive age should begin a five-dose tetanus vaccination schedule as soon as possible (WHO, 2012). A first dose is given between the ages of 15 and 45, followed by a second TT injection four weeks later, and a third TT injection six to twelve months later. To increase the lifetime of tetanus toxoid vaccination, two more shots are administered at 1-year interval (WHO, 2012).

The TT2+ vaccination has been given to 75 percent of pregnant women worldwide, with coverage ranging from 95 percent in Southeast Asia to 53 percent in the East Mediterranean and 63 percent in Africa (WHO,2010).

In Rwanda, 34% of moms who gave birth to a live child within the previous five years had two or more anti-tetanus vaccination injections during their most recent pregnancy (Rwanda DHS,

2020). According to a recent survey conducted in Rwanda, 79 percent of women who gave birth in the five years prior to the study received adequate TT immunization and were fully inoculated against neonatal tetanus for their final children (Rwanda DHS, 2020).

The present study aimed to determine the point prevalence of TT immunization particularly among pregnant attending 3 health facilities in Kigali city, Rwanda.

2.0 Material and Methodology

The structured questionnaire translated in Kinyarwanda as mother's tongue of respondents was used as data collection tool to get primary data from pregnant women attending Remera , Masaka and Kabuga health centers. In order to determine the Tetanus toxoid immunization coverage and associated factors in selected health facilities in Kigali city, Rwanda, the cross-sectional study was conducted from 16th Feb-2022 to 18th March 2022. A quantitative approach was utilized by applying the convenience sampling, the sample size of 245 participants was obtained from the target population of 630 pregnant women aged 15-49 years who attended 3 selected health centers : Remera , Masaka and Kabuga which are located in Kigali city , Rwanda during the period of data collection. The administration of the research instrument to be used during data collection was done by the researcher personally and distributed to 245 pregnant women that were selected. The point prevalence of TT immunization was assessed via inspection of mother's ANC booklet or immunization cards plus mother's verbal report.

The data were entered in Excel and then exported in SPSS version 21 for further analysis and findings were presented using tables and figures.

3.0 Findings and discussion

3.1 Findings

3.1.1 Socio-demographic characteristics of respondents

Table 1: Socio-demographic characteristics of pregnant mothers in selected health facilities in Kigali city, Rwanda (n=245)

Variables		Frequency	Percent
Maternal age	15-19 years	21	8.6
	20-34 years	174	71
	35-49 years	50	20.4
Marital status	Single	35	14.3
	Married	199	81.2
	Separated /divorced/Widow	11	4.5
Residence	Urban	172	70.2
	Rural	73	29.8
Maternal level of education	No formal education	22	9.0
	Primary	106	43.3
	Secondary and higher	117	47.8
Mother's occupation	Farmer	70	28.6
	Housewife	13	5.3
	Employed	71	29
	Not employed	91	37.1
Family wealth index category	Category 1	35	14.3
	Category 2	93	38
	Category 3	117	47.8
Religion	Catholic	112	45.7
	Protestant	122	49.8
	Other	11	4.5

Source: Primary data, 2022

The findings presented in table 1 revealed that total of 245 pregnant mothers participated in the research. The study findings presented in table 1 showed that 71 % of women were aged 20–34 years**,** 81.2 % of them were married, 70.2% were coming from urban residence and 47.8% of

women attended secondary schools and above, 47.8% were in family wealth index category three, 37.1%) were not employed and 49.8percent were protestants**.**

3.1.2 Point prevalence of Tetanus toxoid immunization among pregnant mothers attending Remera, Masaka and Kabuga in Kigali city, Rwanda.

Table 2: The point prevalence of Tetanus Toxoid Immunization among pregnant women attending Remera, Masaka and Kabuga in Kigali city, Rwanda(n=245)

Variables		Frequency	Percent
TT Immunization coverage	≥2TT	169	69
	<2TT	76	31
Evidence of TT vaccination (Vaccination records)	Yes	137	55.9
	No	108	44.1

Source: Primary data, 2022

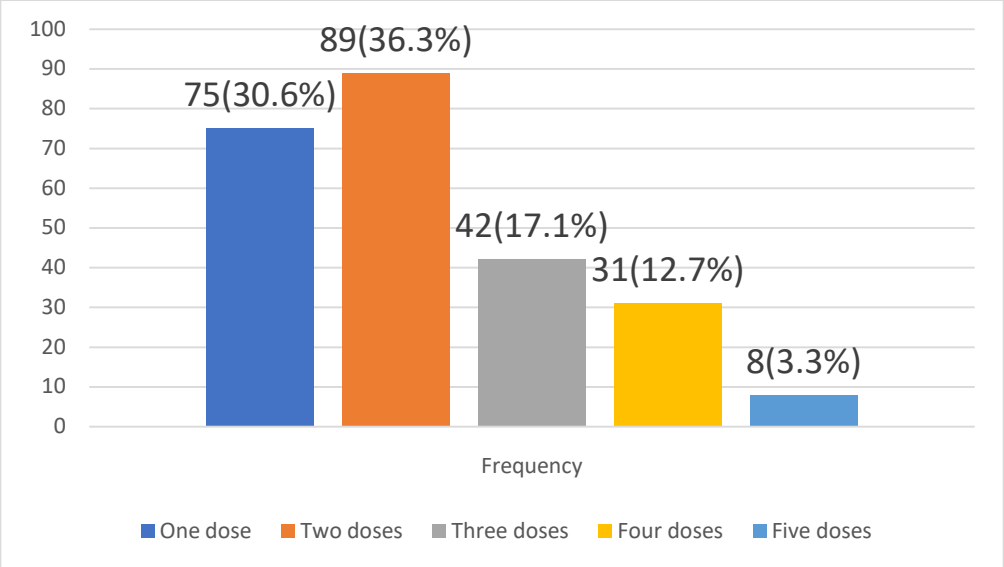

Figure 1 Level of tetanus toxoid immunization of pregnant women attending Remera, Masaka and Kabuga health centers in Kigali city, Rwanda(n=245)

Source: Primary data, 2022

The purpose for the present study was to determine the TT immunization point prevalence among pregnant mothers attending Remera, Masaka and Kabuga health centers in Kigali city, Rwanda.

The findings presented in table 2 and figure 1 revealed that the total of 245(100%) women were immunized with any dose of Tetanus toxoid vaccine and among them only 137(55.9%) women presented vaccination card during data collection. However, TT immunization coverage is confirmed once a woman got at least 2 injections of Tetanus toxoid vaccine, which is equal to 169 (69 %) of women who participated in this research. Meanwhile, only 3.3% women completed the recommended five doses of TT vaccine, 12.7% received 4 doses of TT vaccine, 17.1% received 3 doses of TT vaccine, the big percentage 36.3% of women received 2 doses of TT vaccines while 30.6% women received only 1 dose of TT vaccines.

3.2 Discussion

The point prevalence tetanus toxoid immunization is considered when the woman received at least 2 or more doses of TT vaccine and this increases the duration of protection. In this study, based on vaccination records and verbal recall of the mother, the point prevalence of TT immunization among pregnant women was 69%. This finding is lower than the report found during recent Rwanda DHS, 2020 which was 79%(RDHS,2020) and one reported in the study conducted in Sierra Leone which was 82% (S. Yaya, et al. 2020). This point prevalence is higher than the one reported in the studies conducted in Kenya which was 52.0% (Kilowua and Otieno, 2019) and the one conducted in Pakistan 55.6% (Naeem, et al. 2010). This is could be explained by the mothers are not aware on the importance and schedule of TT vaccination.

4.0 Conclusion

The purpose of the current study was to determine the point prevalence of Tetanus toxoid immunization among pregnant women attending Remera, Masaka and Kabuga health centers, Kigali city, Rwanda. This study discovered that the pregnant women attending Remera, Masaka and Kabuga health centers had poor point prevalence in terms of Tetanus toxoid Immunization. Hence, Remera, Masaka and Kabuga health centers should reinforce health education and organize immunization campaigns in order to increase awareness of mothers on importance of TT immunization.

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