

Assessment of rubella vaccination among unmarried females of Wardha district, central India

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Abstract


Introduction: Rubella that is German measles is usually a mild illness causing rash, sore throat and swollen glands. However, if pregnant women gets infected with rubella, the virus is likely to cause serious damage to the fetus or cause a miscarriage. Rubella can lead to damage to the heart, brain, hearing and sight. Adolescent girls are commonly known as pre-pregnancy age /stage, so this age is very important for pregnancy, infant and child. Care for adolescent girl is very important for her future life. **Aim and Objectives:** To assess and explore the awareness and knowledge towards rubella vaccination among unmarried females in schools and colleges. **Methodology:** This is a Cross sectional study with a quantitative components and Simple randomly selected unmarried females from schools and colleges of Wardha district. **Keywords:** Rubella vaccine, unmarried females, knowledge, school.

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INTRODUCTION

Rubella or ‘German measles’ is a mild viral disease caused by the rubella virus. Rubella is RNA virus in the family *Togaviridae* and is transmitted by droplets, direct contact or vertically from pregnant woman to the foetus. The virus is worldwide distributed and is of public health concern due to its teratogenic effects. Infections in susceptible women during early pregnancy may result in multiple birth defects known as congenital rubella syndrome (CRS). Each year more than 100,000 children particularly in developing countries are born with CRS¹. Rubella is among many vaccine-preventable diseases; the main goal of vaccination is to reduce the incidence of rubella virus infection and CRS. In countries with

vaccination programme especially in developed countries, the number of CRS cases have been markedly reduced^{2,3}. The country doesn’t carry out any supplemental immunization and there is no national policy to hold supplemental immunization activities (SIA)(4). Therefore about 16% of women of reproductive age in India are susceptible to rubella, and the estimated incidence of congenital rubella syndrome is 123 cases in every 100 000 live births⁵. The Global Vaccine Action Plan endorsed by the World Health Assembly in 2012 and the Global Measles and Rubella Strategic Plan (2012–2020) published by Measles and Rubella Initiative partners in 2012 both include goals to eliminate rubella and CRS in at least two WHO regions by 2015, and at least five WHO regions by 2020. This report updates a previous report and summarizes global progress toward rubella and CRS control and elimination during 2000–2014. As of December 2014, RCV had been introduced in 140 (72%) countries, an increase from 99 (51%) countries in 2000 (for this report, WHO member states are referred to as countries). Reported rubella cases declined 95%, from 670,894 cases in 102 countries in 2000 to 33,068 cases in 162 countries in 2014, although reporting is inconsistent (2,5). There is no specific therapy for maternal or congenital rubella infection. Thus, the primary means of preventing CRS is rubella immunization⁵. This study

highlights the importance of awareness and existing knowledge about the vaccine among females that could help public health in focusing on enforcement of efforts toward reducing the burden of rubella.

MATERIAL AND METHODS

Study Setting: Wardha is a district in Nagpur Division of Vidarbha Region of Maharashtra having a Population of 1,300,774. Of which male and female were 668,385 and 632,389 respectively. Wardha District population constituted 1.16 percent of total Maharashtra population. Wardha city is famous for a number of educational institutions. (Census-2011)

Study Design: This was a cross sectional study with a quantitative components.

Study Population: Simple randomly selected unmarried females from schools and colleges of Wardha district.

Sampling size: By using the book of sample size determination of health studies a practical manual by S.K Lwanga and S. Lemeshow, WHO, Geneva, 1991, minimum sample size required in study is 216 at 5% level of significance.

Inclusion Criteria

1. Females who were not under any vaccination trial.
2. Unmarried females who were willing to give consent for participation in the study.

Exclusion Criteria

1. Females vaccinated earlier prior to the study.
2. Unmarried females who were not willing to give consent for participation in the study.

Study Duration: 4 Months including the period of data collection i.e September to December 2015.

Data collection Tool: Participants were evaluated according to the predesigned and pretested protocol questionnaire.

Data collection process: Unmarried females were approached and requested to participate in the study after explaining them the context of the study. Informed written consent was taken from each participant prior to data collection. Respondents were assured about confidentiality of information and its intended use for research purpose only.

Data presentation

Data was presented in the form of

- Tables
- Pie charts
- Bar Diagram

Data Analysis: Data collected was entered in Microsoft Office Excel 2007. Data was analyzed in terms of percentage, frequency using SPSS version 16. Frequency distributions were run to describe the data in form of tables, pie-charts and Figures.

OBSERVATIONS AND RESULTS

The study comprised of 216 females out of which most of them belonged to the age group of 16 to 20 i.e 144 and very few of them belong to the 26 to 30 years age group i.e 4 patients.

Table 1: Age wise distribution of participants

Age Group(yrs)	No of Participants (n=216)	Percentage
16-20 yrs	144	66.67
21-25 yrs	68	31.48
26-30 yrs	4	1.85
Total	216	100
Mean Age	19.60±2.26 yrs(16-28)	

Table no.1 shows the distribution of study participants in which 66.67 % of participants are of the age group of 16 to 20yrs and only 1.85% participants are belongs to the age group of 26 to 30 years with mean age of 19.60±2.26 years.

Table 2: Distribution of participants according to educational status of father

Educational Status of father	No of Participants (n=216)	Percentage
Diploma	25	11.57
SSC	1	0.46
HSC	54	25.00
Graduates	123	56.94
PG	13	6.02
Total	216	100.00

Table 2 revealed that education wise, father's of majority of participants 123 (56.9%) were graduates and only 1 (0.46%) have educational level till secondary school. Others had educational level to as 13 (6.02%) having post graduate level and 25 (11.57%) diploma level.

Table 3: Distribution of females according to educational status of mother

Educational Status of mother	No of Participants (n=216)	Percentage
Illiterate	11	5.56
Primary	6	2.78
SSC	73	33.80
HSC	67	31.01
Diploma	4	1.85
Graduates	45	20.83
PG	9	4.17
Total	216	100.00

Table 3: revealed the education wise status where majority 33.80% were in secondary school and only 1.85% was educated up to diploma level.

Table 4: Distribution of participants according to type of family

Type of family	No of participants (n=216)	Percentage
Nuclear	129	59.72
Joint	87	40.28
Total	216	100.0

Table No.4 shows distribution of participants according to type of family, where 59.72% participants belonged to nuclear family while 40.28% joint family.

Table 5: Distribution of participants according to information about Rubella Vaccine

Information	No of participants (n=216)	Percentage
Yes	196	90.7
No	20	9.3
Total	216	100

Table No. 5 reveals that 90.7% participants had information regarding rubella vaccination whereas only 9.3% no information regarding rubella vaccine.

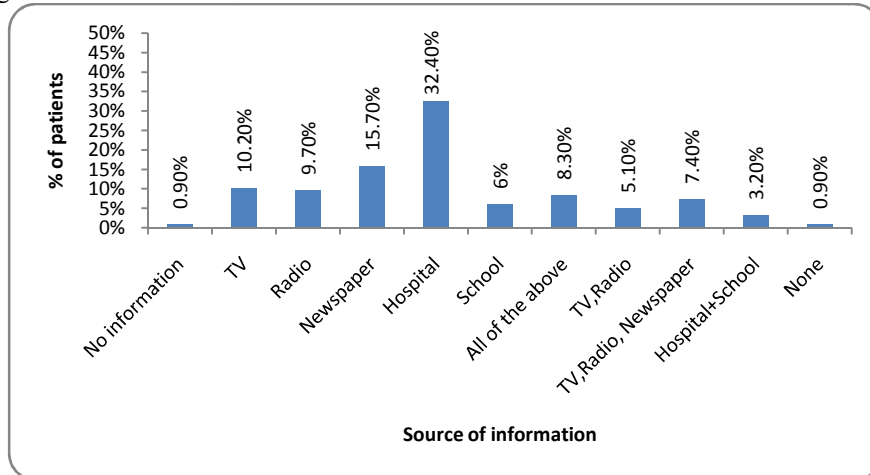


Figure 1: Distribution of participants according to source of information about Rubella Vaccine

Figure 1 shows that hospitals played a major role of providing information regarding rubella vaccination i.e 32.40% while schools provide only 6% and 0.90% had no source of information at all.

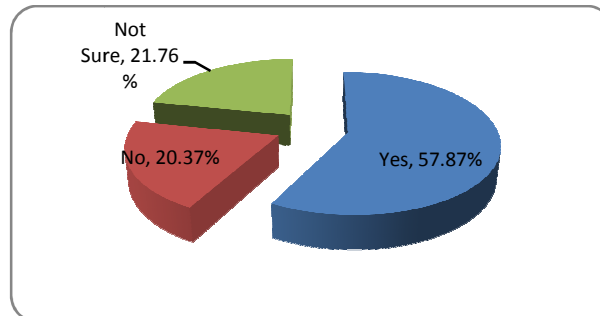


Figure 2: Distribution of participants according to importance of rubella vaccination regarding perception regarding importance of rubella vaccine i.e

57.87% said yes whereas 20.37% said no and rest 21.67% were not sure.

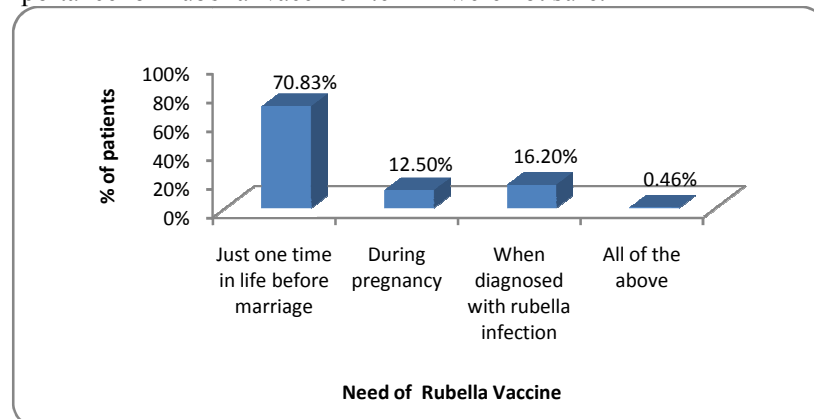


Figure 3: Distribution of participants according to their need of Rubella Vaccine

Figure 3 shows distribution of participants according to need of rubella vaccine i.e 70.83% just one time before

marriage where as 16.20% felt the need when diagnosed with rubella infection.

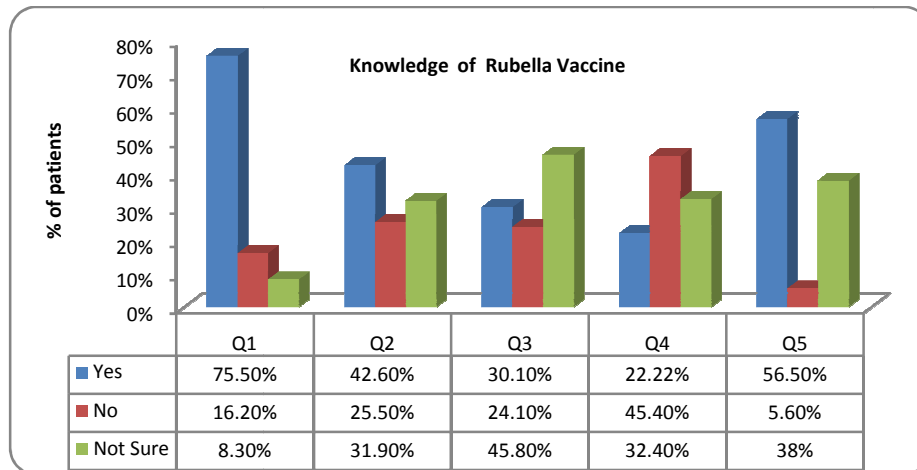


Figure 4: Distribution of participants according to knowledge of rubella vaccine

Table 6:

Q1.	Is rubella vaccination exclusively meant for girls only?	Yes No Not sure
Q2.	Dose rubella virus can cause life threatening conditions?	Yes No Not sure
Q3.	Can rubella virus during pregnancy can cause abortion?	Yes No Not sure
Q4.	Rubella vaccination can cause side effects?	Yes No Not sure
Q5.	This vaccination can give life time immunity against all future exposure to rubella virus?	Yes No Not sure

DISCUSSION

To prevent rubella, primary strategies have included both rubella vaccination of the general population and screening for rubella in pregnant women. In this study it was observed that higher education level of parents was significantly associated with the knowledge and awareness of participants regarding rubella vaccination. It was noted that participants whose parents (mother and father both) were with higher level of education (Graduates) had more awareness and knowledge about vaccination. Similar inference has been put forward by Qutaiba B Al-Iela *et al* as co-relation between parental knowledge practices (PK) and children immunization completeness was observed and a higher percentage of parents with adequate knowledge practices were found for children with complete immunisation 71.7 %⁶. Some previously done studies revealed that household structure plays a role in having awareness towards vaccination that

has been illustrated by Gage *et al.* as the immunisation of children in nuclear families was worse-off than those living in joint families. However in our study we found that maximum participants who had knowledge and awareness about rubella vaccination were living in nuclear families i.e 59.72%⁷. It was found that various sources of information that contributed in creating the awareness of need of vaccination out of 216 female participants were 32.4% hospitals, 15.70% News papers, and 10.20% television-, different findings were observed by Betsch *et al.* found 310 medical students at the Frankfurt University Hospital used internet and other E-health portal as the only source of information⁸.

Limitations

The sample of female participants was obtained from the Wardha district in Maharashtra state, where the study was conducted, and the sample was smaller. The findings of this study may not reflect the awareness and knowledge of whole state; rather they reflect only the awareness and knowledge of those who actually included in the study. Therefore, the findings need to be interpreted within the context of study limitations.

CONCLUSION

Females in reproductive age group are prone to be affected with the dormant infection of rubella; which can cause not only various teratogenic effect in foetus but also can make them prone to the uterine cancer. There was association between educational status of the parents for the acceptance of vaccine. There was a very profound significance of source of information via hospitals i.e 32.40% creating awareness regarding rubella vaccination. Age group of 16 to 20 was the main bulk of this study that main access toward the information and knowledge

of rubella infection and vaccination. Government should insure that susceptible women of child bearing age and health care workers are offered a rubella containing vaccine.

RECOMMENDATIONS

Rubella eradication will not be possible unless global immunization policies are implemented and enforced.

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