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Assessing the Knowledge and Attitude Regarding Measles Rubella Vaccine among Mothers Residing at Nadathara *Gramapanchayath*, Thrissur

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ABSTRACT

Childhood is more precious period in human lifecycle. It requires more care and protection from the diseases. In this world, most of the people affected by various diseases. Thus a study was undertaken to assess the knowledge and attitude of public towards these diseases and it's prevention. Vaccine place a major role in this disease prevention. Considering this fact a descriptive study was conducted to assess the knowledge and attitude regarding Measles Rubella(MR) vaccine among mothers residing at Nadathara Gramapanchayath, Thrissur. The objectives of the study were to assess the knowledge and attitude regarding Measles Rubella (MR) vaccine among mothers, to correlate knowledge and attitude, to associate knowledge and attitude with selected demographic variables of mothers. Fifty samples were collected by the purposive sampling method. Data was collected by administering structured knowledge questionnaire to assess knowledge and Likert five-point rating scale was used to assess the attitude. The results revealed that 22% had inadequate knowledge, 74% had moderate knowledge and only 4% had adequate knowledge regarding Measles Rubella (MR) vaccine. Considering attitude, most of them had (90%) favourable attitude, 6% had neutral attitude and only 4% had unfavourable attitude towards Measles Rubella(MR) vaccine. The study also showed a positive correlation between knowledge and attitude with "r" value 0. 804*. A significant association was found between knowledge and selected demographic variables (education status χ^2=11.7, area of residence χ^2=5.93, measles rubella vaccinatedχ^2=8.7) and also significant association found between attitude and selected demographic variable like previous information about Measles Rubella vaccine (χ^2=5.5).

KEYWORDS

Knowledge; Attitude; Measles Rubella (MR) vaccine; Mothers

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INTRODUCTION

BACKGROUND OF THE STUDY

Immunization is the most effective way of protecting the human body from infectious diseases. Immunization programmes are an integral and important part of the health activities of every country in the world. Providing prophylaxis to a person against some specific diseases through specially made substances (vaccines) is called immunization. Immunization reducing infant mortality rate, maternal mortality rate and controlling the infectious diseases and their carriers. Immunization programme is one of the most important national health programmes to protect pregnant women and children from serious diseases such as tetanus , diphtheria, measles, rubella, typhoid and tuberculosis[1].

Measles is a highly contagious disease caused by a virus (Paramyxovirus). Measles can occur in a person who has never had measles and has no immunity against it. Any non-immune person who has not been vaccinated-or was vaccinated but did not develop immunity- can become infected and is at highest risk of measles and its complications, including death[3].

Measles is a leading cause of childhood deaths. Every year around 3 million cases of Measles are seen and about 900,000 children die because of Measles around the world. Every year in India nearly 2.7 million children get measles. Those who survive, suffer from serious complications including diarrhoea, pneumonia and malnutrition. In India everyday, 500 children die because of Measles. The most worrying part is that the vaccine coverage against Measles in India is only 66% and even below 50% in many states[3].

Rubella is an acute, contagious viral infection transmitted through the respiratory route in children and young adults. The virus is present in the discharges from nose and throat one week before the appearance of a rash and two weeks after. When primary infection occurs in a pregnant woman, the virus can infect the unborn baby. While the illness is generally mild, the importance of preventing it is due to the potentially devastating outcomes of infection during pregnancy, for both mother and unborn child. Infection during pregnancy can result in miscarriage, death of the baby in the womb or infants born with birth defects, known as congenital rubella syndrome (CRS). CRS commonly manifests as heart disease, cataract in eyes, mental retardation and deafness[3]. It has been observed that around 40-45% of women in the childbearing age are susceptible to Rubella. Moreover it is surprising to know that over 40000 babies are born with birth defects every year because of Rubella infection during pregnancy in India[3].

As Kerala joins the national campaign for measles –rubella (MR) vaccination, with the goal of eliminating measles and controlling congenital rubella syndrome (CRS) by 2020, the Health Department seems to be dealing with a dual task they have to convince general public about the rationale for launching the campaign on one hand, while on the other, they have to defeat the negative propaganda launched by the anti-vaccination lobbyists against the campaign. Despite the availability of a vaccine, measles continues to be an important cause of morbidity and mortality in the country. Even in Kerala, many do not even consider it to be a serious disease and are unaware of the serious complication of the disease such as meningoencephalitis. Rubella, on the other hand is a mild self-limiting infection which manifests itself with low-grade fever and rashes. While both adults and children are largely unaffected by rubella, the consequences can be devastating for women if they contract the infection in early pregnancy[4].

Over 14.5 lakh children in Kerala has been administered measles-rubella (MR) vaccine. Pathanamthitta tops in the measles-rubella campaign with the vaccination of 31.53% of the targeted children so far. Kottayam and Thiruvanthapuram districts are closely behind with 29.36% and 29.8% respectively. The districts that are lagging behind are Malappuram, Kozhikode and Kannur. The percentages of children vaccinated in these districts so far are 10.29%, 12.32% and 14.38% respectively. The districts whose coverage is between 15% and 20% are Kasaragod (19.74%), Kollam (19.71%), Palakkad (18.05%), Eranakulam (17.24%). The vaccination percentage in the remaining districts are: Idukki (28.34%), Alappuzha (27.73%) and Wayanad (26.69%). The percentage of measles - rubella vaccination in Thrissur was 18.86%. The state level percentage is 18.93%[5].

NEED FOR THE STUDY

Measles is one of the leading causes of death among young children even though a safe and cost-effective vaccine is available. Measles vaccination resulted in a 84% drop in measles deaths between 2000 and 2016 worldwide. In 2016, about 85% of the world's children received one dose of measles vaccine by their first birthday through routine health services- up from 72% in 2000. During 2000-2016, measles vaccination prevented an estimated 20.4 million deaths making measles vaccine one of the best buys in public health. In 2016, there were 89,780 measles deaths globally- making the first year measles deaths have fallen below 100,000 per year. Before the

introduction of measles vaccine in 1963 and widespread vaccination, major epidemics occurred approximately every 2-3 years and measles caused an estimated 2.6 million deaths each year[6].

Rubella infection in pregnant women can result in infants born with congenital rubella syndrome(CRS), a group of severe birth defects such as cataract, hearing deficiency, mental and physical growth retardation and serious congenital heart defects. The CRS risk is at the highest during the first trimester of gestation but, unfortunately, the infection often goes unnoticed because even rashes may not surface in some cases. Elimination of rubella infection assumes a lot of importance as one of the prime strategies for preventing congenital deformities, pediatricians point out[4].

In 2016,42 measles/rubella outbreaks were reported in Kerala, resulting in 1,627 cases of measles or rubella, including four deaths. In the absence of a CRS registry, there is no clear data on the true burden of CRS in Kerala or in the country. However, systematic reviews of various studies have reported that 10-50% of children with congenital anomalies in India have laboratory evidence of CRS[4].

Measles vaccine is given at the age of completed 9 months (270+days of life). Transplacental maternal anti-measles antibodies persist in the child for as long as 9 months. These antibodies protect the child against measles, hence measles usually occur after 9 months. Giving vaccine before 9 months may not be very effective due to interference by the maternal antibodies. This rule is not always true. In countries like India, mother may be malnourished and may not have good titres of anti-measles antibodies. Children born to such mothers can suffer from measles as early as 6 months of life. Hence during epidemics of measles the vaccine can be given as early as 6 months, but this should be followed by one more measles vaccine at 9 months. In West, children are given straight MMR at 12-15 months of age. That is due to lack of measles with mass measles vaccination. In our country, if one waits till 12-15 months many children will develop measles before that. Hence we advise measles vaccine at 9 months followed by MMR at 15 months. As we achieve higher coverage of measles vaccination in our country, incidence of measles will become far less. That time we can think of postponing the age of measles vaccine and even giving it as MMR at 12-15 months. Booster dose is not recommended. However one may see modified measles in a child vaccinated with measles vaccine. Hence Indian Academy of Pediatrics recommends booster in form of MMR vaccine at 15-18 months of age and at 5 years again[8].

Today, the World Health Organization(WHO) recommends that children receive two doses of measles vaccine. The WHO also recommends that measles and rubella efforts be combined. The Measles & Rubella Initiative is making great strides to bring this opportunity to the world's children. The vaccines are safe and effective, and when coverage in a population is very high, the viruses stop circulating. Very high coverage can thus lead to the elimination of measles and rubella[7].

World Health Organization congratulates India for launching one of the world's largest vaccination campaign against measles, a major childhood killer disease, and congenital rubella syndrome (CRS) , responsible for irreversible birth defects. It is a part of global efforts to reduce illness and deaths due to measles and rubella in the country. India has already beaten smallpox, polio, maternal and neonatal tetanus and, very recently, yaws. Further gains in the battle against measles will help achieve a number of other public health priorities. A regional flagship of WHO in South-East Asia, elimination of measles will contribute to achieving Sustainable Development Goal's target 3.2 which, among others, aims to end preventable deaths of newborns and children under five years of age by 2030[13].

Mothers are the first care provider of children and who is needed to reduce the under five mortality rates. The knowledge of vaccine among mothers was quite poor and suggest the need for strong emphasis on public education to increase awareness among mothers and positive attitude about Measles Rubella vaccine. In this concept present study was aimed to assess the knowledge and attitude towards Measles Rubella vaccine among mothers residing at Nadathara Gramapanchayat, Thrissur.

STATEMENT OF THE PROBLEM

A study to assess the knowledge and attitude regarding Measles - Rubella (M R) vaccine among mothers residing at Nadathara Gramapanchayath, Thrissur.

OBJECTIVES

1) To assess the level of knowledge regarding Measles - Rubella (M R) vaccine among mothers.

2) To assess the level of attitude regarding Measles - Rubella (M R) vaccine among mothers.

3) To correlate the knowledge with attitude regarding Measles - Rubella (M R) vaccine among mothers.

4) To associate the level of knowledge regarding Measles - Rubella (M R) vaccine among mothers with their selected demographic variables.

5) To associate the level of attitude regarding Measles - Rubella (M R) vaccine among mothers with their selected demographic variables.

Assumptions

- Rural population may have poor knowledge towards Measles - Rubella (M R) vaccine
- Rural population may have poor attitude towards Measles - Rubella (M R) vaccine
- Selected demographic variable may have influence on knowledge and attitude towards Measles - Rubella (M R) vaccine

Hypothesis

H 1 —There is a significant correlation between knowledge and attitude on Measles - Rubella (M R) vaccine among mothers.

H 2 —There is a significant association between the knowledge on Measles - Rubella (M R) vaccine among mothers with their selected demographic variables.

H 3 —There is a significant association between the attitude on Measles - Rubella (M R) vaccine among mothers with their selected demographic variables.

Delimitations

- The study is limited to the mothers who are in age group of children with 9 month to 15 years.
- The study is limited to the mothers who can read and understand Malayalam.
- The study is limited to the people who are living in Nadathara Gramapanchayath, Thrissur.
- The study is limited to 50 samples who are willing to participate in the study

METHODOLOGY

Research Approach

Research approach involves the description of the plan to investigate the phenomenon under study in a structured (quantitative), unstructured (qualitative), or a combination of the two

methods (quantitative- qualitative integrated approach). The research approach used in this study is quantitative approach[14].

Research Design

Research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure[15].

A descriptive research design was used for this study. In which knowledge questionnaire was utilized for assessing knowledge and attitude scale was utilized for assessing the attitude towards Measles Rubella vaccine among mothers in a selected community in Nadathara Gramapanchayath, Thrissur.

Procedure for data collection

A systematic collection and analysis of data are most vital to any empirical research. To conduct this study in Nadathara Gramapanchayath, a formal written permission was obtained firstly from college authorities for conducting the study outside of the campus. A formal written permission was obtained from the President of Nadathara GramaPanchayth prior to the data collection for conducting this study in Nadathara rural area. The data collection period was between 11-0 4 -2018 to 13-0 4 -2018.

Before collecting data from samples, initially we introduced our self and developed rapport. We explained the purpose of the study and an informed consent was obtained from respondents, individually. Firstly we collected demographic data from the samples. Then the knowledge questionnaire and attitude scale were distributed to the samples and provided 15 minutes to complete the questionnaire and clarification of doubts.

Plan for data analysis

The data obtained was entered into the data sheet. Data was analyzed on the basis of the objectives of the study using descriptive and inferential statistics. The data on demographic variables was analyzed using frequency and percentage distribution. The inferential statistics like Karl Pearson Correlation was used to find out the correlation between knowledge and attitude towards Measles Rubella vaccine. Chi square was used to find out the association between level of knowledge and attitude towards Measles Rubella vaccine among mothers with their selected demographic variables. The plan for data analysis includes descriptive research design statistic such as frequency, percentage , mean , standard deviation , inferential statistics such as chi square and Karl Pearson correlation coefficient.

- Frequency and percentage analysis for demographic profile of mothers.
- Frequency and percentage analysis for level of knowledge towards measles rubella vaccine.
- Frequency and percentage analysis for level of attitude towards measles rubella vaccine.
- Mean and standard deviation for level of knowledge and attitude towards measles rubella vaccine.
- Karl Pearson correlation coefficient used to correlate the knowledge with attitude towards measles rubella vaccine.
- Chi square used to associate level of knowledge with their selected demographic variables.
- Chi square used to associate level of attitude with their selected demographic variables.

SECTION B : Description on the level of knowledge of mothers regarding Measles - Rubella (M R) vaccine

This section deals with the level of knowledge of mothers regarding Measles - Rubella (M R) vaccine. It was assessed by structured knowledge questionnaire.

Table 1 Frequency and percentage distribution of level of knowledge regarding Measles Rubella vaccine among mothers N=**50**

Level of knowledge	Frequency (n)	Percentage(%)
Inadequate	11	22
Moderate	37	74
Adequate	02	04

The above table depicts the description on the level of knowledge of mothers towards measles rubella vaccine. Majority of the sample (74) % had moderate knowledge and 22% had inadequate knowledge and only 4% have adequate knowledge. **N=50**

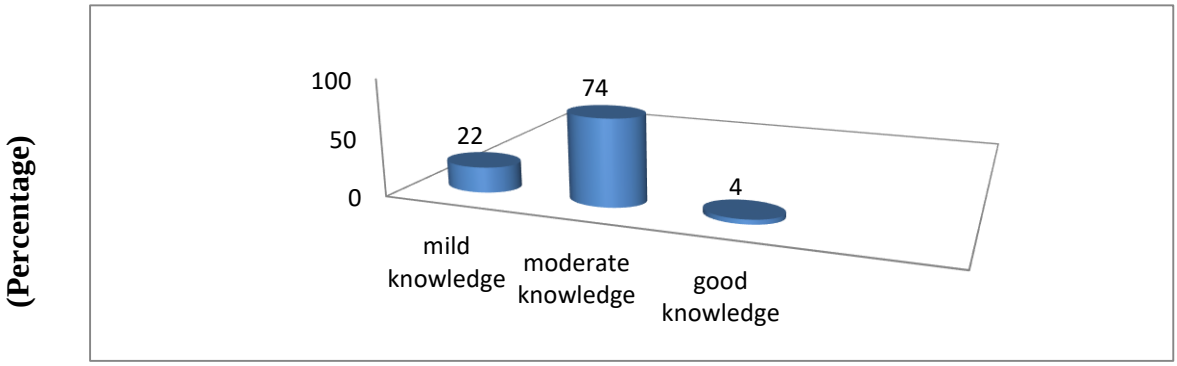

Fig 1 Distribution of level of knowledge of mothers towards Measles Rubella vaccine.

Section C : Description on the level of attitude of mothers regarding Measles - Rubella (M R) vaccine

This section explains the attitude of mothers regarding Measles Rubella vaccine. It was assessed by Liker's Five-point rating scale

Table 2 Frequency and percentage of attitude of mothers towards Measles Rubella vaccine **N=50**

Level of attitude	Frequency(n)	Percentage(%)
Unfavorable	02	04
Neutral	03	06
Favorable	45	90

The above table reveals the description on attitude of mothers towards measles rubella vaccine. Out of 50 samples, 90% belongs to the category of favourable attitude and 06% samples are neutral only 4% are having unfavourable attitude towards Measles Rubella vaccine.

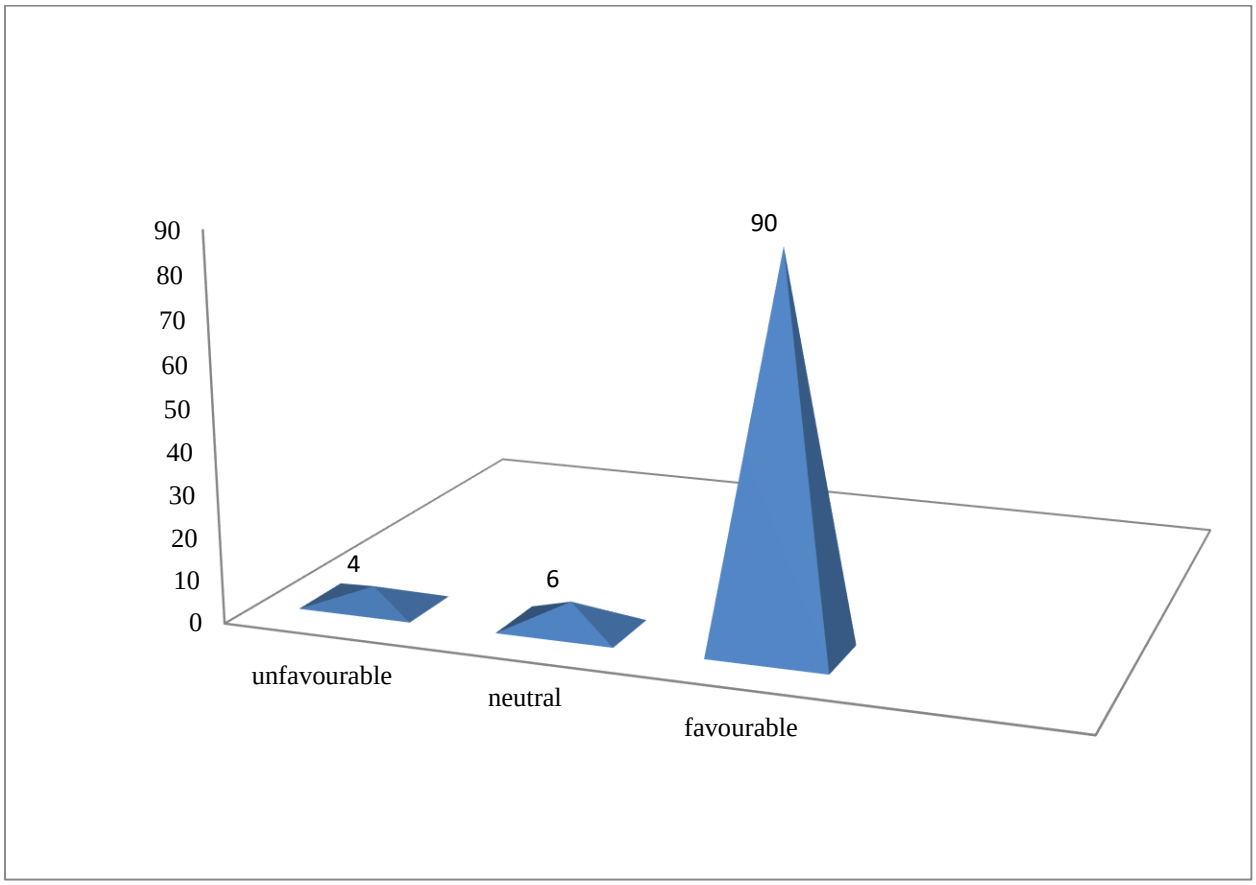

Fig 2 Percentage distribution of attitude of mothers towards Measles Rubella

Section D

This section deals with the correlation between levels of knowledge with attitude of Measles Rubella vaccine among mothers. In order to find out the correlation between knowledge with

attitude the following hypothesis were formulated.

H 1—There is a significant correlation between knowledge and attitude on Measles - Rubella (M R) vaccine among mothers.

The relationship between level of knowledge with attitude regarding Measles Rubella vaccine were tested by Karl Pearson's Correlation. For the statistical analysis, the null hypothesis was framed as follows.

H_{01} : There is no significant correlation between knowledge and attitude on Measles Rubella vaccine among mothers.

Table 3 Correlation between knowledge with attitude regarding Measles Rubella vaccine among mothers **N=50**

Variables	n	r value	P value
Knowledge	50	0.804*	0.05
Attitude			

*Significant at the level of 0.05

Table 3 displays the correlation between knowledge with attitude regarding Measles Rubella vaccine among mothers. The calculated Karl Pearson correlation coefficient value is 0.804, which statistically significant at 0.05 level. Hence there was a positive correlation found between knowledge and attitude. Thus the research hypothesis was accepted and null hypothesis was rejected.

DISCUSSION

The study findings are discussed with reference to the objectives.

Objective 1: To assess the level of knowledge regarding Measles - Rubella (M R) vaccine among mothers.

The results revealed that among 50 samples, 22% had inadequate knowledge, 74% had moderate knowledge and only 4% have good knowledge towards Measles Rubella vaccine.

The results of the present study were consistent with an earlier descriptive study which was done to evaluate the effectiveness of structured teaching programme on knowledge regarding Measles and its vaccination among mothers of under five children at selected rural areas of Punjab. Sample size was 50. The study findings showed that 60% of the mothers had inadequate knowledge and 40% had moderate knowledge and none of them had adequate knowledge on Measles and its vaccination[16].

Objective 2: To assess the level of attitude regarding Measles - Rubella (M R) vaccine among mothers.

The findings of the study showed that, out of 50 samples, 90% mothers had favourable attitude, 6 % had neutral and 4% had unfavourable attitude towards Measles Rubella vaccine.

Similar findings have been reported in a descriptive survey design to assess the knowledge and attitude on immunization among mothers of under five children, Belgaum, Karnataka. Convenience sampling technique was used to select 50 mothers. The results showed that mean knowledge value on immunization of mothers of under five children was 58.1 and attitude score was 41.4. This indicates that the mothers of under five children had moderately adequate knowledge on immunization and positive attitude towards immunization[18].

Objective 3: To correlate the knowledge with attitude regarding Measles - Rubella (M R) vaccine among mothers.

The present study depicts there is correlation between knowledge with attitude towards Measles Rubella vaccine. The 'r' value is 0.804 which is significant at the level of 0.05 level and it is concluded that there was positive correlation found between knowledge with attitude towards Measles Rubella vaccine among mothers.

Similar findings have been reported in a descriptive survey design to assess the knowledge and attitude on immunization among mothers of under five children, Belgaum, Karnataka. Convenience sampling technique was used to select 50 mothers. The results showed that mean knowledge value on immunization of mothers of under five children was 58.1 and attitude score was 41.4. This indicates that the mothers of under five children had moderately adequate knowledge on immunization and positive attitude towards immunization. The correlation between knowledge on immunization and attitude of mothers showed that there is a positive correlation between knowledge on immunization and attitude (r=0.483) [18].

The results of the present study was supported by another cross sectional study was conducted among mothers having one year old child at Mawatch Goth, Kemari town, Karachi. During survey 209 mothers were interviewed. The results showed that majority (70%) of women started routine immunization of the child. About 30% mothers quit immunization after missing one dose. A positive attitude was reflected from both parents towards immunization[17].

Objective 4: To associate the level of knowledge regarding Measles - Rubella (M R) vaccine among mothers with their selected demographic variables.

The study findings revealed that there is a significant association between level of knowledge regarding Measles Rubella vaccine among mothers with their selected demographic variables such as Educational status (χ^2 value=11. 7, TV 3. 8), Area of residence (χ^2 value=25.93, TV 3,. 84), M R vaccinated or not (χ^2 value= 8. 71, TV 3. 84). Hence, the research hypothesis was accepted and null hypothesis was rejected.

The results of the present study findings is in accordance with an earlier descriptive study which was done to evaluate the effectiveness of structured teaching programme on knowledge regarding Measles and its vaccination among mothers of under five children at selected rural areas of Punjab. Sample size was 50. The study findings showed that there is a significant association between age and knowledge level of mothers noticed (χ^2 value=8.611*) at $P<0.05$[16].

Objective 5: To associate the level of attitude regarding Measles - Rubella (M R) vaccine among mothers with their selected demographic variables.

The study findings revealed that there is significant association between attitudes regarding Measles Rubella vaccine among mothers with their selected demographic variables. There is a significant association between attitude with the demographic variables like previous information regarding Measles Rubella vaccine (χ^2 value= 25. 55, TV 3. 84). So the research hypothesis of the present study was accepted and null hypothesis was rejected.

The present study findings is in contradicted by a descriptive study to assess the knowledge and attitude on immunization among mothers of under five children, Belgaum, Karnataka. Convenience sampling technique was used to select 50 mothers. Chi-square test revealed that there is no significant association between knowledge on immunization and selected demographic variables[18].

SUMMARY

Immunization has saved the lives of more children than any other medical intervention in the last 50 years. Immunization forms one of the most important and cost effective strategies for the prevention of childhood sicknesses, disabilities, prevent the mortality rates and is thus a basic need for all children. Hence, we felt the need of assessing the level of knowledge and attitude regarding Measles Rubella vaccine among mothers. Sample size was 50. They were selected through purposive sampling technique and knowledge questionnaire was used to assess the knowledge and Likert five-point rating scale was used to assess the attitude. The results showed that 22% of mothers had adequate knowledge, 74% had moderate knowledge and only 4% had

good knowledge regarding Measles Rubella vaccine. With regard to the attitude towards Measles Rubella vaccine 90% had favourable attitude, 6% had neutral attitude and 4% had unfavourable attitude. The results showed that there is a significant correlation found between knowledge and attitude regarding Measles Rubella vaccine among mothers. The results showed a significant association between level of knowledge with selected demographic variables like educational status, area of residence and M R vaccination. The results also showed that there is a significant association between attitude with selected demographic variable like previous information about Measles Rubella vaccine.

CONCLUSION

The present study shows that most of the mothers had moderate knowledge regarding Measles Rubella vaccine. Majority of the mothers had favourable attitude towards Measles Rubella vaccine. The study showed a positive correlation between the knowledge and attitude. A significant association was found between knowledge and selected demographic variables and also significant association found between attitude and selected demographic variables.

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