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International Journal of Neonatal & Pediatric Nursing
Volume 1 Issue 1

A Study to Assess the Effectiveness of Educational Programme on Knowledge regarding Oral Rotavirus Vaccination among Mothers of Infants in Selected Hospitals of Betul, Madhya Pradesh

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ABSTRACT

Children of today are the citizens of tomorrow. According to the world population statistics, over 40% of the population is constituted of the children population. Rotavirus vaccine is recommended by the WHO, it prevents rotavirus infection which causes severe diarrhoea and dehydration in children. Diarrheal disease is a leading cause of death in children in developing countries in addition to rotavirus.

Statement: *A study to assess the effectiveness of Educational Programme on knowledge regarding oral rotavirus vaccination among mothers of infants in selected Hospitals of Betul, Madhya Pradesh.*

Methodology: *The conceptual framework of the study was based on health belief model. An evaluator research approach was adopted in the study. The population of the study consisted of all mothers of infants of Selected Hospitals of Betul. Non probability convenient sampling technique was utilized to select 60 mothers of infant based on predetermined criteria. The investigator prepared a structured questionnaire containing 25 items to assess the knowledge of the mothers of infant regarding the Oral rotavirus vaccine. Seven experts did the validation of the tool. Reliability of the tool was established prior to the pilot study. Reliability of the tool was found to be r = 0.9. Pilot study was conducted on 06 mothers of infant to check the feasibility and practicability of the study, which gave a basis for investigator to conduct the actual study. Actual study was conducted on 60 mothers of infants of District hospital, Betul (M.P.).*

Duration: *Duration of the study was from 1 April 2019 to 10 April 2019.*

Result: *The assessment of knowledge of the workers results that 36.7% has poor knowledge regarding the oral rotavirus vaccines while 58.3% had average knowledge regarding oral rotavirus vaccines. Here by using inferential statistic we can compare the mean pre test knowledge score is 15.53 with the mean post test knowledge score is 22.58 which is significantly high after implementation of self instructional module, hence this way H1 is proved.*

Conclusion: *36.7% mothers of infant have poor knowledge regarding oral rotavirus vaccine while 58.3% were found average in knowledge. After the implementation of planned teaching programme, there is a significant increase in knowledge of mothers of infant regarding oral rotavirus vaccine which is calculated by t-test and the result was – 18.52 (Table 10). There was significant association between knowledge on oral rotavirus vaccines with selected demographic variables.*

Summary: *The need for voluntary family planning is growing fast, and it is estimated that the unmet need' will grow by 40 percent during the next 15 years. The knowledge gained through Planned teaching Programme was good as it was evident with a highly significant difference (t (59)=18.525, P<0.01) between the mean post test mean = 22.58 and pre-test mean = 13.5.*

INTRODUCTION

Children of today are the citizens of tomorrow. According to the world population statistics, over 40% of the population is constituted of the children population. Parents play a primary role in health of their children. In particular parent's involvement in planning and promoting immunization campaigns is critical to successful efforts [1-5]. Parents serve as their children's primary educators of health issues. Babies are born with protection against certain diseases because antibodies from the mother were passed to them

through the placenta, after birth breastfed babies get the continued benefits of additional antibodies in breast milk. But in both cases, the protection is temporary. Immunization (vaccination) is a way of creating immunity to certain diseases by using small amounts of a killed or weakened microorganism that causes the particular disease.

Vaccines stimulate the immune system to react as if there were a real infection – it fends off the "infection" and remembers the organism so that it can fight it quickly should it enter the body later. Rotavirus vaccines protect against the most deadly form of diarrhea in young children [6-8].

One of Gavi's main objectives is to ensure access to these vaccines in the countries that need them most. Gavi set out to support rotavirus vaccine introductions in 33 countries by the end of 2015. We surpassed this goal in 2014, 12 months ahead of schedule. By the end of 2015 we had funded introductions in 37 countries. Our support has helped countries immunize more than 36 million children against rotavirus. Still, we finished the 2011-2015 period 11 percentage points short of our coverage target [9-10].

OBJECTIVES

1) To determine the level of knowledge regarding oral rota virus vaccination among mothers of infants as measured by structured knowledge questionnaire.
2) To assess the effectiveness of Educational Programme on knowledge regarding oral rota virus vaccination among mothers of infants.
3) To find out the association between pre-test knowledge score of mothers regarding oral rota virus vaccination and selected demographic variables.

ASSUMPTIONS

1) The study assumes that Mothers have some knowledge regarding oral rota virus vaccination.
2) Educational Programme is an approved strategy for improving the knowledge.

REVIEW OF LITERATURE

The literature review that was under taken for the purpose of conducting the study has been presented under the following heading:

1) Reviews related to incidence of diarrhea.
2) Reviews related to need and effectiveness of Rotavirus vaccination among under five children.
3) Reviews related to mother's knowledge on Vaccination.

Reviews Related to Incidence of Diarrhea

MAY 2015 the study was conducted on "Vaccines for preventing rotavirus diarrhea; vaccine in use to evaluate rotavirus vaccines approved for use (RVI, RV5, and LLR) for preventing rotavirus diarrhea. Forty-one trials met the inclusion criteria and enrolled a total of 186,263 participants. Twenty-nine trials (101,671 participants) assessed RVI, and 12 trials (84,592 participants) evaluated RV5RV1 and RV5 prevent episodes of rotavirus diarrhea. The vaccine efficacy is lower in high-mortality countries; however, due to the higher burden of disease, the absolute benefit is higher in these settings. No increased risk of serious adverse events including intussusceptions was detected, but post-introduction surveillance studies are required to detect rare events associated with vaccination [11-13].

Review Related to Need and Effectiveness of Rotavirus Vaccination among under Five Children.

Muhsen K, Anis E 2011-2015 a control study on Effectiveness of rotavirus pentavalent vaccine under a universal immunization program in Israel Immunization with RotaTeq was less common in RVGE cases (73.5%) than in controls (90.1%), $p<0.001$: this association persisted after controlling for potential confounders. Effectiveness of the complete vaccine series was estimated at 77% (95% confidence intervals (CI) 49%90%) in

children aged 659 months, and 86% (95% CI 65%94%) in children aged 623 months; while for the incomplete series, the respective estimates were 72% (95% CI 28%89%) and 75%(95% CI 30%91%). Vaccine effectiveness was estimated at 79% (95%CI45%92%) against CI associated RVGE hospitalizations and 69%(95% CI 11%89%) against other genotype RVGE hospitalizations. High effectiveness of RotaTeq as the sole rotavirus vaccine in a universal immunization program was demonstrated in a high income country. Although partial vaccination conferred protection, completing the vaccine series is warranted to maximize the benefit [14-16].

Review of Literature Related to Knowledge

Sareh Shakerian Iran 2014 conducts a Cost-Effectiveness of Rotavirus vaccine. Under-Five Children A cost-effectiveness analysis was performed using a decision tree model to analyze rotavirus vaccination, which was compared with no vaccination with Iran's ministry of health perspective in a 5-year time horizon. Epidemiological data were collected from published and unpublished sources. Four different assumptions were considered to the extent of the disease episode. To analyze costs, the costs of implementing the vaccination program were calculated with 98% coverage and the cost of USD 7 per dose. Medical and social costs of the disease were evaluated by sampling patients with rotavirus diarrhea. And sensitivity analysis was also performed for different episode rates and vaccine price per dose. For the most optimistic assumption for the episode of illness (10.2 per year), the cost per DALY averted is 12,760 and 7,404 for RotaTeq and Rotarix vaccines, respectively, while assuming the episode of illness is 300%, they will be equal to 2,395 and 354, respectively, which will be highly cost-effective. Number of life-years gained is equal to 3,533 years. Assuming that the illness episodes are 100% and 300% for Rotarix and 300% for Rota Teq, the ratio of cost per DAILY averted is highly cost-effective, based on the threshold of the world health organization (< 1 GDP per capita = 4526 USD), The implementation of a national rotavirus vaccination program is suggested [17-20].

METHODOLOGY

1) **Research Approach** – Evaluator Research Approach
2) **Research Design** – True research design
3) **Setting** – District Hospital, Betul Madhya Pradesh
4) **Independent Variable** – Planned teaching program regarding oral rotavirus vaccine.
5) **Dependent Variable** – Knowledge of mother of Infants.
6) **Sample** – Mother
7) **Sample Size** – 60
8) **Sampling Technique** – non probability convenient sampling is used
9) **Inclusive Criteria**
   - Mothers of infants upto 1 year.
   - Those who are living in Betul, Madhya Pradesh.
   - Those who are present during data collection.
10) **Exclusive Criteria**
   - Mothers of infant more than 1 year
   - People who are related to medical profession.

Data Collection Methods

Written permission was obtained from higher authority prior to data collection. The study was carried out in the same way as that of the pilot study. A total 60 sample were selected for the study. Data collection was held in District hospital, Betul Madhya Pradesh. The investigator introduces her and the purpose of the study was explained to the subject and informed consent was obtained. Confidentially was assured to the entire subject to get their cooperation.

The pre test was taken using a structured knowledge questionnaire regarding oral rotavirus vaccination methods intervention that is planned teaching programme has been

given and after 3 days interval post test was taken.

FINDING OF THE STUDY

Section I

Findings regarding demographic variables

- The data show that majority 28.3 Percentage of Mothers of infant were in the age group of 24-28 years, 25% of Mothers of infant were in the age group of 21-23 years, and 25% mothers of infant were in the age group of 29-33 years.
  There was a trace no. of mothers of infant in age group of 33 and above years. Over all Majorities of the mothers of infant were in the age group of 24-28 years.
- The Educational status of mothers of infant was, 6.6 Percentage were illiterate, 36.7% were in primary level, 21.7% were up to high school and 35.0% were up to higher secondary. Over all Most of the mothers of infant (36.7%) had educational status up to primary level while only 6.6% of them were illiterate 70%
- The 50 percentage of mothers of infant were labor, 21.7% mothers of infant in private job and 21.7% in private job, and 21.7% eligible couple were in self business and only 6.6% eligible couple in govt. job.
- The data in show that 40.0 Percentage of mothers of infant having their monthly income 3000 Rs. 21.7% were having 2000Rs, 20.7% were having monthly income 1000Rs and only 18.3% having 3000 or above Moreover, 40% were having monthly income 3000 Rs.
- The data show that 63.3 Percentage of mothers of infant were in joint category of family and 33.3% were in nuclea family while 3.4% of mothers of infant were in extended category of family. Overall Majority of mothers of infant 63.3% were in the category of joint family and only 3.4% mothers of infant were in the extended family.
- The data show that 45.0 Percentage mothers of infant 2 child, 28.3% workers having one child and 21.7% having 3 child and 5.0% mothers of infant are having only four or more children respectively.

Section II

- Comparison of increase in knowledge of mothers of infant with the pre test knowledge
- This study shows that there is a significant increase in knowledge of mothers of infant after the self instruction module. Where the t-value is 18.525.
- Association between demographic variable and knowledge on oral rotavirus vaccines.
- There was a significant x2 = 13.65 ($P<0.05$) association between age in year (grouped) and Pre-test score.
- There was a significant x2 = 7.14 ($P<0.05$) association between sex and pre-test score.
- There was a significant x2 = 18.01 ($P<0.05$) association between education and pre-test score.
- There was a significant x2 = 21.92 ($P<0.05$) association between Occupation and pre-test score.
- There was a significant x2 = 13.83 ($P<0.05$) association between Income of Family and pre-test score.
- There was a significant x2 = 9.84 ($P<0.05$) association between Types of Family and pre-test score.
- There was a significant x2 = 24.61 ($P<0.05$) association between No. of Children and pre-test score.

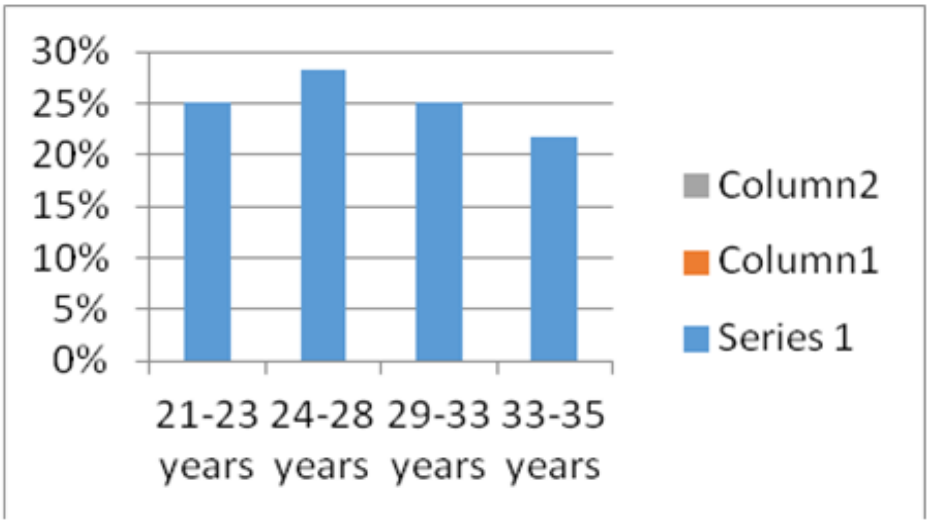

Fig. 1.Bar Diagram Showing the Distribution of the Age of the Mother

Part III: Assessment of Level of Attitude of Respondents

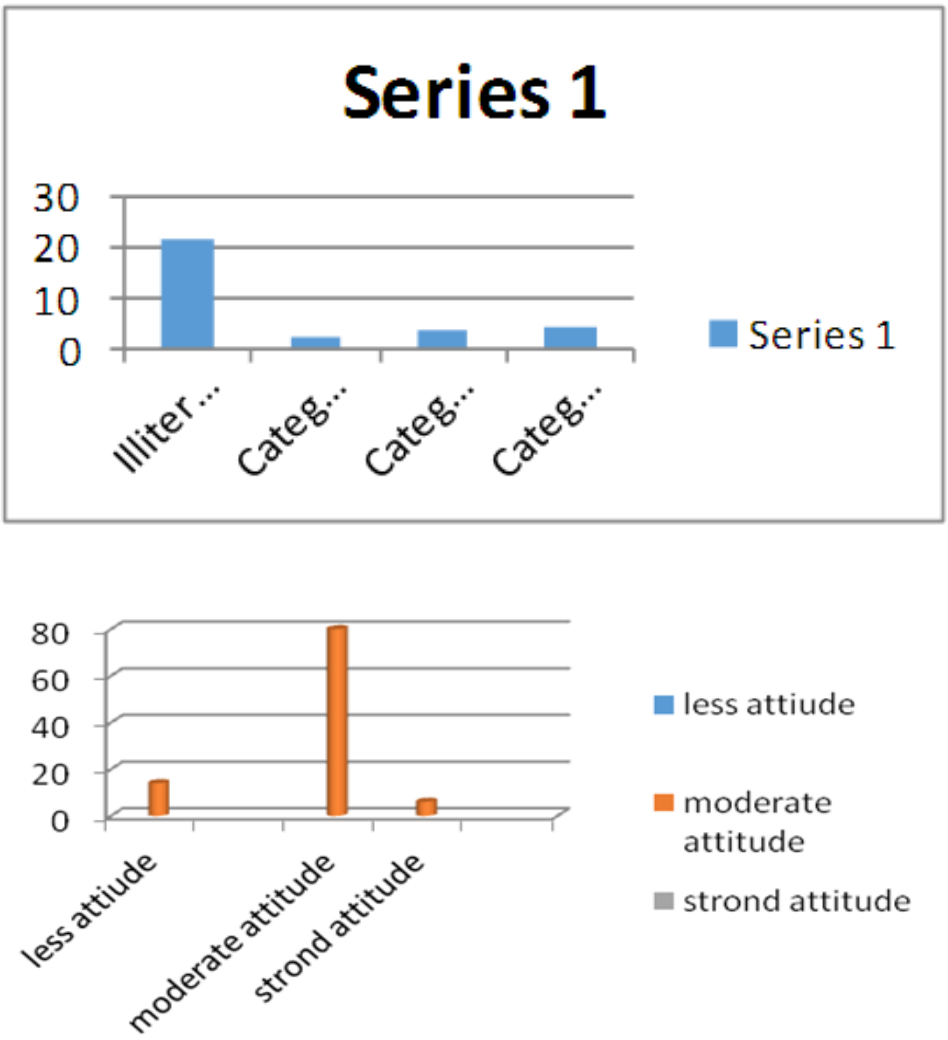

Fig. 2: Percentage Distribution of Level of Attitude among Middle School Children.

The above graph shows that the majority of 40(80%) children have moderate Attitude, 7(14%), children have less attitude and 3(6%) children have strong knowledge regarding disaster preparedness.

Part IV: Association of Knowledge Score of Middle School Children's With Demographic Variables

S.NO.	Demographic variables	Inadequate knowledge	Moderate knowledge	Adequate knowledge	df	Chi Square
1	**Age** • 10 • 11 • 12 • 13	 1 0 1 3	 4 7 12 21		6	9.29
2	**Gender** • Male • Female	 3 2	 26 18	 0 1	2	1.43
3	**Standard** • 6 • 7 • 8	 1 2 2	 13 26 5	 1 0 0	4	5.43
4	**Religion** • Hindu • Muslim	 3 2	 24 20	 1 0	2	6.84

Part V: Association of Attitude Score of Middle School Children's with Demographic Variables.

S.NO.	Demographic variables	Less attitude	Moderate attitude	Strong attitude	df	Chi Square
1	**Age** • 10 • 11 • 12 • 13	 0 2 2 3	 4 6 11 19	 1 0 0 2	6	4.62
2	**Gender** • Male • Female	 7 0	 20 20	 2 1	2	6.88
3	**Standard** • 6 • 7 • 8	 5 1 1	 9 25 6	 1 2 0	4	7.75
4	**Religion** • Hindu • Muslim	 6 1	 22 18	 0 3	2	6.34

CONCLUSION

After the detailed analysis, this study leads to the following conclusion:

1) Data presented in table 7 shows that 36.7% mothers of infant has poor knowledge regarding oral rotavirus vaccine while 58.3% were found average in knowledge.
2) After the implementation of planned teaching programme, there is a significant increase in knowledge of mothers of infant regarding oral rotavirus vaccine which is calculated by t-test and the result was – 18.52.
3) There was significant association between knowledge on oral rotavirus vaccines with selected demographic variable.

IMPLICATIONS

Nursing practice

1) A major role of the nurse is teaching the Mothers of infants. The extended and expanded role of professional nursing emphasizes preventive and primitive aspects of health.
2) Nurses play a role in educating Mothers of infant regarding oral rotavirus vaccines in community or in the hospitals. Charts, audiovisual materials and equipment can be used to demonstrate, reinforce or review the content of the teaching session.
3) The present study revealed the effectiveness of planned teaching programme as a teaching method.

   The investigator as a nurse felt the need for nurses to act as facilitators to educate mothers of infant regarding oral rotavirus vaccines. They can help the parents to develop control over their behavior and also an acceptable behavioral pattern in life.

   This may help them in acquiring better knowledge and give the same to parents attending these clinics.

Nursing Education

1) Nursing curriculum plays an important role in the preparation of future nurses. Family planning favorably influences the health development and well being of the family, so people must be encourage planning their families. The national health policy of government of India reflects the growing political will family happy and healthy.
2) The curriculum also should incorporate activities like preparation of booklets, handouts, pamphlets and self-teaching materials to train the parents and caregivers at home, hospital and nursery setting.

Nursing Administration

1) The nursing administrator should implement the outreach programmes to make the public aware of methods of oral rotavirus vaccines, so as to prevent an untoward effect of population explosion.
2) There should be necessary health education material and administrative support provided to conduct health programmes. Adequate funds should be provided to develop health teaching materials.

Nursing Research

1) The literature and research done regarding oral rotavirus vaccine is very scarce. These cities a greater need to develop information material based on needs.
2) Research should be addicted to assess the knowledge, attitude and practices of mothers of infants regarding the adaptation of oral rotavirus vaccines. Since most couples complete their family within five years of marriage.
3) This information can form the basis for need based family health education for mothers as well as parents. As we know, the family planning programme in India started with a “clinic based, woman oriented” approach. Where such an

approach had proved to be consistent with their social objective birth control, among other measure & where this objective was gradually fulfilled.

4) The aim of government of India is every infant should adopt rotavirus vaccination.

RECOMMENDATIONS

On the basis of the present study, the following recommendations have been made for similar study:

1) A similar study can be conducted on a larger sample thereby the findings can be generalized for a larger population.
2) All experimental study can be conducted to find out the effect of teaching on oral vaccines.
3) A study can be conducted to identify the various factors which influence the mothers of infant knowledge on oral rotavirus vaccines.
4) A study can be conducted to find out the effects of Planned teaching Programme.
5) A follow-up study of planned teaching programme could be carried out to determine the effectiveness in retaining knowledge.
6) A comparative study on the different strategies of teaching regarding the same topic could be done.

SUMMARY

1) The need for voluntary family planning is growing fast, and it is estimated that the unmet need' will grow by 40 percent during the next 15 years. But even though it is an economically sound investment, oral rotavirus vaccines have been losing ground as an international development priority. Funding is decreasing. And the gap between the need and the available resources is growing.
2) The data was analyzed by descriptive and inferential statistics. The knowledge gained through Planned teaching Programme was good as it was evident with a highly significant difference ($t(59)=18.525$, $P<0.01$) between the mean post-test mean = 22.58 and pre-test mean = 13.53.
3) Communication is the key to good discipline and behaviour. The present study proved that planned teaching programme is an effective strategy to improve the knowledge of mothers of infant regarding oral Rota virus vaccines.
4) The overall experience of conducting this study was satisfying and enriching. The respondents were satisfied and happy with the information received. The result of the study shows great need for health personnel to educate the mothers of infant regarding oral rotavirus vaccines.

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