

Assess the Knowledge Regarding the Importance of National Immunization Schedule among Primi-Para Women

Sabitha Sadanandan¹, Virgina Varghese^{2*}, Reshma PS³, Evangeline. J⁴

¹ Lecturer, University of Buraimi, Sultanate of Oman. Email: sabitha.s@uob.edu.om

² Lecturer, University of Buraimi, Sultanate of Oman. Email ID: virgina.varghese@gmail.com or virgina.v@uob.edu.om

³ Lecturer, University of Buraimi, Sultanate of Oman. Email ID: reshma.p@uob.edu.om

⁴ Prinicpal, Josco College of Nursing, India. Email ID:

KEYWORDS

Primi-para women, Immunization schedule, Knowledge

ABSTRACT

This study assessed the knowledge regarding the knowledge of national immunisation schedule among primi-parous women. The objectives of the study were to assess the existing level of knowledge among primi-parous women regarding Immunization schedule and to find out the association with the level of knowledge regarding Immunization schedule among primi-parous women and selected socio demographic variables. Descriptive research design was selected for the study. The sample composes of 60 primi-parous women, selected by non-probability purposive sampling technique. The conceptual framework was based on Imogene Kings Goal attainment Theory. The study was conducted using structured knowledge questionnaire. Data were descriptively analysed with SPSS version 22, while inferential statistical analysis was performed using the chi-square test, independent t-test, and one-way analysis of variance. Results with a $p < 0.05$ were considered statistically significant. More than 80% of primi-parous women had moderate level of knowledge regarding Immunization schedule, (10%) had inadequate knowledge and (8.30%) had adequate knowledge. The chi square value of the selected demographic variables was less than table value at 0.05 level of significance. Hence the study concludes that only 8.30% of primi-para women had adequate knowledge regarding Immunization schedule and there was no significant association between the level of knowledge and selected demographic variables.

1. Introduction:

The foundation of public health is immunization, which is essential in lowering the morbidity and mortality rates of diseases that can be prevented by vaccination[1]. To safeguard people and the community at large, the National Immunization Schedule (NIS) offers a thorough framework for the prompt administration of vaccines[2]. Particularly important is understanding and adherence to the NIS for primi-parous women, or those giving birth for the first time. Assuring the health and wellbeing of mothers and their infants depends heavily on this group[3].

Comprehending the significance of the NIS empowers primiparous women to make knowledgeable choices regarding their child's health, promoting early prevention of potentially fatal conditions. Missed vaccinations, however, could raise the risk of disease outbreaks and have long-term health effects due to ignorance or misunderstandings about the schedule[2].

Immunization, the most cost-effective public health intervention, continues to be under- used. It is profoundly tragic that almost two million children still die each year from disease for which vaccines are available at low cost. It is profoundly tragic that almost two million children still die each year from disease for which vaccines are available at low cost[4]. According to UNICEF; vaccine preventable diseases cause an estimated 2 million deaths or more every year of which approximately 1.5 million deaths occur among children below five year age [5]. According to WHO as per statistical record about 63.3% children are fully immunizes and fully immunized 21.1% are partially immunized and 96% are not immunized. WHO analysis that it needs more awareness among parent about immunization [6].

A cross-sectional study was conducted with a sample of 210 mothers at Combined Military Hospital, from April 2023 to February 2024, with the objective to assess and evaluate the knowledge level of

primipara mother regarding immunization and the factor influencing immunization status in children under three years using consecutive sampling. Findings showed that there was gap in literature about primiparous mothers' knowledge and this study results showed that 27.6% had low, 50% had moderate, and 22.4% had high knowledge. The study concluded that a significant portion of primiparous mothers had moderate to low knowledge about child immunization, contributing to incomplete vaccination rates. Enhanced education and awareness programs, particularly for less informed mothers, were essential to improve immunization coverage in Azad Kashmir [7]

A study assessing the knowledge of immunization schedules among primi gravida mothers in Vadodara, India, found that 45% had primary education, 36.7% had secondary education, and 13.3% had higher secondary education. Most mothers (31.7%) received information from healthcare providers, followed by 26.7% from internet sources. The study concluded that educational status significantly influenced knowledge levels regarding immunization schedules [8]. Specifically, obstetrician-gynecologists are qualified to vaccinate pregnant women as well as women in general. Vaccine-preventable disease-related morbidity and mortality, as well as unfavorable pregnancy outcomes such as congenital defects, spontaneous abortion, preterm birth, and low birth weight, are risks for expectant mothers [8]. WHO recommends that pregnant women receive tetanus-diphtheria (Td) vaccinations during antenatal care visits. Through passive immunity, immunization during pregnancy probably offers direct benefits to the fetus and newborn in addition to the mother. [9]

2. Material And Methods

Study Design: This descriptive study is to assess the knowledge level of primigravida mother. This design was considered appropriate for this study because it helps to observe the knowledge level.

Sampling technique: In this study, non-probability purposive sampling technique was used.

Study Area:

The present study was conducted in a Selected Hospital in Kerala and was selected conveniently by the researcher. The Private hospital has a well-equipped Gynecology consultation area. There is well arranged waiting area for the patient and approximately 200 patients were consulted in the gynecology OP and there were approximately 80-90 patients were in the primiparous group undergoing. The researcher selected the setting based upon the proximity, familiarity of the place, feasibility criteria for selecting samples and the setting were feasibility and availability of the study participants.

Study Population:

Target population is the primi-parous women admitted in selected hospitals at Alappuzha district. Accessible population is the primi-parous women of a selected hospital at Pathanamthitta District. In this study, the sample consisted of 60 Primi-parous women, Selected Hospital in Kerala

Inclusion criteria:-

- Primi-para women
- who are willing to participate
- available during the time of data collection.

Exclusion criteria:

- Primi-para women those who are not willing to participate
- not available during the time of data collection.

Sample and Sampling Procedure:

In this study, non-probability purposive sampling technique was used. A sample size of 60 consenting primi-parous mothers who visited Gynecologic welfare clinics in the Selected Hospital in Hospital, was used for the study. This sample was determined statistically using power analysis with 10% attrition rate. Power analysis calculation was done using the formula Sample size calculation formula: $n \geq 2(SD)^2 [Z\beta + Z\alpha/2] \geq 22.89 \delta^2$ where, Population size (N) =200, n= sample size, Z score

(Confidence level at 95%) = 1.96, Margin of error 5% = 0.05, Proportion of the population $p = 0.5$, $qvalue = 1 - p = 0.5$, $sample\ size\ (n) = 60$. Firstly, non-probability purposive sampling technique was used to select primi parous women from the gynecologic clinic. This was based on willingness to participate, availability and health disposition of the respondents.

Instrument for Data collection

The following instruments were used for collection of data.

Tool: 1: Socio Demographic Performa to collect demographic variables, it consist of variables such as were age, religion, type of family, Place of Residence, Educational status, Occupational status, Family monthly income, Dietary pattern and Source of information. Technique is Self- Administered Structured Questionnaire

Tool 2: Structured Knowledge Questionnaire consisting of questions regarding Immunization schedule, it consists of 30 closed end questions to assess the knowledge of Primi-parous women regarding Immunization Schedule. Technique is self -Administered Structured Knowledge Questionnaire.

Duration of study and Data collection process: The ethical Approval was obtained from the College and then a formal letter was addressed to the medical Superintendent of the hospital to obtain permission for the study. After approval from the hospital. The purpose of the study was explained to the primi-parous women. Informed consent was obtained for those willing to participate in the study. The socio-demographic data and the knowledge questionnaire was given to the samples. After the assessment of knowledge, Information booklet was distributed to all the women on the same day. The data collection was for 4 weeks.

Description of the tool

The tool consist of

Tool 1: Socio demographic Performa

Tool 2 : Structured Knowledge Questionnaire

Tool 1: Socio demographic Performa

It consist of variables such as were age, religion, Type of Family, Place of Residence, Educational status, Occupational status, Family monthly income, Dietary pattern and Source of information.

Technique: Self- Administered Structured Questionnaire

Tool 2: Structured Knowledge Questionnaire

It consists of 30 closed end questions to assess the knowledge of Primi-parous women regarding Immunization Schedule.

Technique: Self -Administered Structured Knowledge Questionnaire.

Statistical Analysis:

The data was analysed in terms of descriptive statistics and inferential statistics based on the objectives and hypothesis. Master data sheet was prepared by the investigator to analyse the data.

Descriptive statistics was used to assess the frequency and percentage distribution for representation of socio demographic variables and Inferential statistics Chi-square test was used to determine association between the knowledge and selected socio demographic proforma.

3. Results

The data were organized and presented under the following headings.

Section 1: Distribution of samples according to the socio demographic data.

Section 2: Level of knowledge regarding Immunization schedule among primi-parous women

Section 3: Association between knowledge score and selected socio demographic variables.

SECTION 1: DISTRIBUTION OF SAMPLES ACCORDING TO THE SOCIO MOGRAPHIC DATA.

Majority of samples (76.70%) belonged in 20-25 years of age; one fourth (18.30%) belonged to 26-30 years. Very few (3.30%) subjects belonged to more than 35 years and (1.70%) 31-35 years. About their religion majority of samples (51.70%) belonged to Hindu, one third (28.30%) samples belonged to Muslim, and one fourth (20.00%) samples belonged to Christian. Regarding their type of family, (70%) belonged to nuclear family, one third (30%) belonged to joint family. Regarding their place of living (51.70%) live in Panchayat, one third (33.30%) live in Municipality and one fourth (15%) live in Corporation. About their educational level (53.30%) completed Graduation, one third (28.30%) samples completed post-graduation and above, one fourth (16.70%) completed Diploma, very few (1.7%) samples belonged to Higher secondary education and none of them belonged to Secondary education. Regarding their occupation (60%) were Housewives, one third (30%) were Private employed, few (6.70%) samples were Government employed, very few (3%) samples were self-employed and none of the samples were Daily Wager. About their monthly income (35%) belonged to Rs15,001-Rs20,000, another one third (33.3%) belonged to Rs 10,001-Rs15,000, one fourth (20%) belonged to more than 20,000, few (11.70%) belonged to Rs 5001-Rs 10,000 and none of them had income less than Rs 5000. Regarding their dietary pattern (68.30%) were vegetarians and one third (31.70%) were Non vegetarians. About the source of information about immunization, half of samples (50%) had information from Health personnel, one third (23.30%) had information from Peer groups, one fourth samples (15%) had information from TV/ Internet, Few (6.70%) from Magazines/Newspaper and (5%) from other sources.

SECTION 2:- LEVEL OF KNOWLEDGE REGARDING IMMUNIZATION SCHEDULE AMONG PRIMI-PAROUS WOMEN

Figure 10: Bar diagram shows that percentage distribution of level of knowledge among primi-parous women regarding Immunization schedule. (n=60)

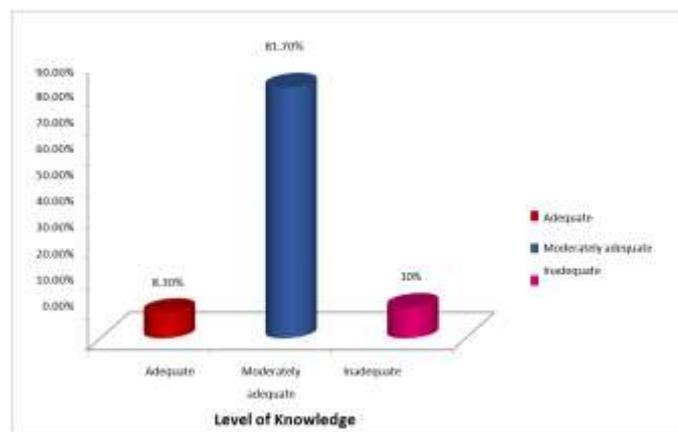


Figure 1 shows that 8.3% primi-parous women were having adequate knowledge, 81.7% were having average knowledge and 10% women were having poor knowledge

SECTION 3:- ASSOCIATION BETWEEN KNOWLEDGE SCORE AND SELECTED SOCIO DEMOGRAPHIC VARIABLES

This section deals with the analysis of knowledge score among the primi-parous women with the selected socio demographic variables.

To find out the association between level of knowledge among the primi-parous women with the selected socio demographic variables, the following hypotheses were formulated.

- H₀₁ – There will be no significant association between the knowledge scores and selected socio demographic variables regarding Immunization schedule.
- H₁ – There will be a significant association between the knowledge scores and selected socio demographic variables regarding Immunization schedule.

Table 1: The data presented in the table shows that chi square values of socio-demographic variables

Sl. No	Variables	χ^2 (Chi-Square Value)	df	Level of Significance	Remarks
1	Age	40.6	45	0.05	NS (Not Significant)
2	Religion	34.6	30	0.05	NS (Not Significant)
3	Type of Family	23.4	15	0.05	NS (Not Significant)
4	Place of Residence	29.3	30	0.05	NS (Not Significant)
5	Educational Status	41.5	45	0.05	NS (Not Significant)
6	Occupational Status	44.2	45	0.05	NS (Not Significant)
7	Family Monthly Income	45.2	45	0.05	NS (Not Significant)
8	Dietary Pattern	12.13	15	0.05	NS (Not Significant)
9	Source of Information	81.4	60	0.05	NS (Not Significant)

Interpretation by Variables:

About the Age, there is no significant relationship between the age of the respondents and their knowledge about the NIS. This suggests that knowledge about the immunization schedule is consistent across different age groups of primi-parous women. Also, the Religion does not significantly influence the level of knowledge about the NIS. Women from various religious backgrounds appear to have similar awareness levels. The type of family (nuclear or joint) has no statistically significant impact on knowledge of the NIS. This indicates that family structure does not determine awareness levels. Urban or rural residency does not significantly affect knowledge of the NIS. This finding suggests that location may not be a barrier to information access regarding immunization. Educational background does not have a significant association with knowledge of the NIS. This might imply that awareness programs are not adequately tailored or accessible, regardless of educational attainment. Whether a woman is employed or not does not significantly influence her knowledge about the NIS. Employment status alone does not determine awareness levels. There is no significant relationship between family income and knowledge about the NIS. Financial resources may not directly affect awareness in the study population. The dietary habits of the participants have no significant impact on their knowledge of the NIS. This variable appears unrelated to immunization awareness. While "source of information" often plays a key role in awareness, the analysis found no significant association. This could suggest that the effectiveness of communication strategies is uniform but not impactful enough to show a difference.

4. Discussion

The study's findings about primiparous women's inadequate understanding of the national immunization schedule have several significant ramifications for public, community, and individual health outcomes. A lack of knowledge about immunization, one of the best public health measures for preventing infectious diseases.

Pregnant women who lack sufficient education may miss or postpone immunizations, raising their risk of developing pregnancy-related problems like tetanus, influenza, and other avoidable diseases. Immunizations against severe diseases that might result in poor pregnancy outcomes, such as preterm labor and neonatal problems, are essential for mothers. Examples of these include the influenza vaccine and tetanus toxoid (TT) vaccine[2,10].

By giving the fetus passive immunity, maternal immunization has a major impact on neonatal health. For instance, the influenza and Tdap vaccines guard against problems from influenza and newborn pertussis[9]. Lack of maternal education may cause fewer women to get vaccines, which would have an indirect effect on the health and survival rates of newborns[11].

The lack of a substantial correlation between sociodemographic factors and knowledge levels suggests that knowledge gaps may reflect systemic problems in education and healthcare delivery rather than being unique to subgroups. Prior studies have shown that low literacy levels among women and a lack of education during prenatal visits are frequently the causes of ignorance regarding immunization schedules[12].

During prenatal visits, healthcare practitioners should make vaccine education a priority. Research indicates that organized educational initiatives greatly enhance mothers' comprehension of the advantages of vaccinations and their adherence to them[2,5].

5. Conclusion

The research endeavor was designed to evaluate the awareness of prime-para women concerning the significance of the National Immunization Schedule and its contribution to safeguarding the health and welfare of their offspring. This objective emphasizes the necessity of ascertaining the level of comprehension and cognizance among first-time mothers, which can facilitate the development of educational initiatives and enhance compliance with immunization protocol.

The study concludes that while most primiparous women demonstrated a moderate level of knowledge regarding the National Immunization Schedule, there remains a significant proportion with either inadequate or limited understanding. Specifically, 10% of participants had inadequate knowledge, highlighting the need for targeted educational interventions. Moreover, only 8.3% exhibited adequate knowledge, indicating room for improvement in awareness and comprehension. These findings underscore the importance of enhancing educational initiatives and strategies to ensure better compliance with immunization protocols, contributing to improved health outcomes for mothers and their offspring.

Reference

- [1] Roper, Lauren, Mary Ann Kirkconnell Hall, and Amanda Cohn. "Overview of the United States' Immunization Program." *The Journal of Infectious Diseases*, vol. 224, suppl. 4, 2021, pp. S443–S451. DOI: 10.1093/infdis/jiab310.
- [2] Immunization Schedules." *Vaccines & Immunizations*, CDC, 21 Nov. 2024.
- [3] Why Maternal Vaccines Are Important." *Pregnancy & Vaccines*, CDC, 11 July 2024.
- [4] Bhadoria AS, Mishra S, Singh M, Kishore S. National immunization programme–mission Indradhanush programme: newer approaches and interventions. *The Indian Journal of Pediatrics*. 2019 Jul 1;86:633-8.
- [5] UNICEF. World Immunization Week 2018. Available from: <https://www.unicef.org/world-immunization-week-2018>
- [6] World Health Organization. Immunization coverage. 15 July 2024. Available from: <https://www.who.int/news-room/fact-sheets/detail/immunization-coverage>
- [7] Iltaf S, Khadim R, Parveen S, Shabnum N. Knowledge of Primiparous Mothers on Immunization of Children under three Years in Rawalakot, Azad Kashmir: Primiparous Mothers' Knowledge on Immunization. *Pakistan Journal of Health Sciences*. 2024 Oct 31:08-13.
- [8] Swamy GK, Heine RP. Vaccinations for pregnant women. *Obstetrics & Gynecology*. 2015 Jan 1;125(1):212-26.
- [9] World Health Organization. Maternal immunization against tetanus and influenza: Policy and practices [Internet]. WHO; 2020 [cited 2024 Jan 1]. Available from: <https://www.who.int>
- [10] Singh A, Dubey S, Gupta R. Barriers to maternal immunization: A qualitative study of perceptions in low-resource settings. *BMC Public Health*. 2021;21(1):890
- [11] Munoz FM, Bond NH, Maccato M, Pinell P, Hammill HA, Swamy GK, et al. Safety and immunogenicity of Tdap vaccine in pregnant women and infants. *Am J Obstet Gynecol*. 2018;218(1):148.e1-148.e10.
- [12] Kumar S, Singh S, Verma P. Maternal knowledge and awareness of immunization schedules: An observational study in rural India. *J Maternal Child Health*. 2019;15(2):123-9