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Research Article

# Assessment of Parents Knowledge, Attitude and Practice about Child Vaccination in Selected Rural Areas of Kalaburagi District, India

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Abstract

**Objective:** Immunization has evolved as one of the most successful public health interventions, reducing the incidence of infectious diseases and improving quality of life. This study was conducted to analyze the level of knowledge, attitude and experience of childhood vaccination among local participants from selected rural areas of Kalaburagi District, which can be related to the immunization status of their children.

**Method:** The Prospective, Cross-Sectional study was conducted at selected villages of rural areas in Kalaburagi district. Parents were enrolled into the study by considering the study criteria. Demographic details and other relevant data were collected at pre-test and post-test

**Results:** A total of 631 parents from 10 selected rural areas were enrolled in the study out of which 611 parents completed the study and 20 parents did not complete the study. It was evident that 470(76.92%) children's immunization was completed according to schedule, 73(11.95%) children's immunization was not complete according to schedule and 68(11.13%) parents did not know whether child immunization was complete according to schedule or not. The pre and post-test KAP score was assessed using SPSS software and Chi- Square test was carried out to analyze the Statistical significance. The study was statistically significant at p-value of <0.01.

**Conclusion**: The study concluded that better awareness of childhood immunization among parents led to increased immunization experience in their children. Health workers must be trained at the grass root level and through them the importance of childhood vaccination must spread to all rural areas.

**Keywords**: Immunization, Knowledge, Attitude, Practice

## INTRODUCTION:

As per WHO, 'A vaccine is a biological preparation that improves immunity to a particular disease. It contains an agent resembling a disease-causing microorganism, and is made from weakened or killed forms of the microbe, its toxins or one of its surface proteins. The agent stimulates the body's immune system to recognize the other agent as foreign, destroy it, and "remember" it, so that the immune system can more easily recognize and destroy any of these microorganisms that it later encounters.'[1]

The administration of vaccines is called vaccination. Vaccination is the most effective method of preventing infectious diseases.[2] The WHO reports that licensed vaccines are currently available for 25 different preventable infections.[3] Vaccines are one of the most thriving health interventions that have diminished occurrence of infectious diseases and improved quality of life in the population along with reducing avoidable human suffering, costs of care and treatment. Over the course of time, more and more diseases have attained the status of being vaccine preventable, including the ones like pneumonia and diarrhoea.

Active immunization/vaccination has been named one of the "Ten Great Public Health Achievements of the 20th Century" by CDC, United States.[4] VPDs contribute significantly to Under five mortality rates, In India under five mortality rates (U5MR) is 31.5/ 1000 in Urban and 47.5/1000 in Rural areas.[5] The main reason for this difference is due to parents' lack of knowledge about vaccination. NFHS-5 (2019-2021) reported that only 76.4% of children in India received basic immunization by 12-23 months. It is also reported that 84.1% of children in Karnataka have received primary vaccination by 12-23 months and 75.3% in Kalaburagi district.[6] Expanded Program on Immunization (EPI) started in 1978 in India. In 1985, it expanded beyond the city and became known as the Universal Immunization Program (UIP). In 1992, it became part of the Child Survival and Safe Motherhood Programme, and in 1997, it was included in the National Reproductive and Child Health Programme. The two main milestones of the UIP are the eradication of polio in 2014 and the eradication of maternal and neonatal tetanus in 2015. Parental immunization decisions are important to increase immunization rates and parental adherence to the immunization schedule. Global research shows that, among other factors, parents' knowledge and beliefs have a significant impact on the initiation and continuation of childhood vaccinations. [7,8]

Pharmacists are slowly creating identity as vaccination providers in the developed countries and are those members of

the healthcare team who can educate and motivate patients daily. As per ASHP guidelines on pharmacist's role in immunization, pharmacists can play an important role in disease prevention by promoting awareness and administering vaccines.[9] In India, the responsibility of promotion and administration of vaccine still rests upon the shoulders of the nurses and social workers to a great extent. Looking at the current scenario, it would be right to suggest that it is high time that Indian pharmacists take up the opportunity to use their skill in the society and advocate importance of vaccination amongst the public, thereby relieving their professional counterparts from this burden to some extent and help improve the vaccination coverage in as many parts of the country as possible.

Therefore, the study was carried out to assess the level of knowledge, attitude and practice of parents of Under Five years old children regarding VPDs & routine immunization & at the same time parents were motivated by updating their level of knowledge regarding the importance of immunization, as the parents of Under Five years old children are very receptive to advice given by Doctors & Health Care Professionals regarding the health of the child.

**OBJECTIVES:**

***General Objective:***

To assess the Parent's Knowledge, Attitude and Practice and its associated factors regarding Immunization of Children in Kalaburagi District of Karnataka.

***Specific Objectives:***

- To educate parents regarding Vaccination Schedule, Importance of Vaccination and Vaccine Preventable Diseases (VPDs).
- To carryout Pharmacist mediated Patient counselling to eligible parents.

## MATERIALS AND METHODS:

***Study Approval:*** The study protocol was prepared and submitted to the Ethics Committee on Human subject's research for ethical clearance. The study was approved by institutional ethics committee and ethical clearance certificate was issued.

***Consent letter:*** The study was initiated at Ten selected villages in Rural areas of Kalaburagi District after obtaining a consent letter from:

- District Health Officer (DHO), Department of Health and Family Welfare, Kalaburagi,
- The Deputy Director (DD), Department of Women and Child Development, Kalaburagi,
- The Child Development Project Officer (CDPO), Department of Women and Child Development, Kalaburagi.

***Study materials:***

1. Informed Consent Form.
2. Case Report Form consisting of two parts:

a) Parents Socio-Demographic details along with Child immunization status.

b) KAP Questionnaire.

3. Leaflets on Child Immunization.
4. Related Audio and Visual aids.
5. Latest National Immunization Schedule.

***Study site:*** Study was conducted at the Anganwadi Centers in Selected Rural areas of Kalaburagi District

***Study Design:*** A Community-Based; Prospective, Cross-Sectional Study

***Study Period:*** The Study was carried out for a duration of six months.

***Study Criteria:*** The Parents were enrolled into the study by considering the following study criteria:

***a) Inclusion Criteria:***

- Parents having children whose age is less than 5 years.
- Parents who are Permanent residents of selected villages.
- Pregnant women attending Anganwadi centers.
- Parents who are also working in Health care team (ANM, ASHA workers and Anganwadi workers).
- Caretakers (or) Guardians of Children in absence of Parents.

***b) Exclusion Criteria:***

- Parents who are not willing to participate in study at any given time.
- Married women who have not yet conceived.
- Parents having children above 5 years of age.
- Parents residing in Urban areas.

***Study Procedure:***

- The study was carried out at the Anganwadi centers situated in rural areas of Kalaburagi district, after obtaining ethical clearance. Subjects were enrolled into the study considering the above inclusion and exclusion criteria, after obtaining written consent to participate.
- The participants were assessed by using questionnaires on source of information regarding Child Vaccination, Socio-demographic variables, Immunization status, National Immunization schedule, Vaccination Preventable Diseases.
- Parents were provided with KAP questionnaire's consisting of English and Kannada language, were instructed how to complete the questionnaire, and each question was explained. Sufficient time was given to complete the questionnaire.
- Parents are then taught the importance of childhood vaccinations, vaccination schedules and vaccine preventable diseases (VPD).
- After 1 month of Pre-test, once again data was collected with the same questionnaire on data collection form to assess the acquired Knowledge, Attitude and Perception of Parents towards Child Vaccination.

***Analysis of Data:*** Each question about Knowledge, Attitude and Practice were scored to assess their KAP level regarding child vaccination. The Data Collected from the questionnaires was analyzed by Chi-Square test using SPSS Software was applied to find the statistical significance. Immunization status of children was assessed based on their parent's statement.

## RESULTS AND DISCUSSION:

The Cross-sectional study was carried out in different villages around Kalaburagi district. A total of 611 parents from 10 selected rural areas were enrolled in the study. The study was carried out at the Anganwadi centers situated in rural areas of Kalaburagi district, after obtaining ethical clearance. Parents having children whose age is less than 5 years, Parents who are

Permanent residents of selected villages and Pregnant women attending Anganwadi centers were enrolled into the study. Parents were provided with KAP questionnaire's consisting of English and Kannada language, were instructed how to complete the questionnaire, and each question was explained. Sufficient time was given to complete the questionnaire.

Parents are then taught the importance of childhood vaccinations, vaccination schedules and vaccine preventable diseases (VPD). It was evident that 470(76.92%) children's immunization was completed according to schedule, 73(11.95%) children's immunization was not complete according to schedule and 68(11.13%) parents did not know whether child immunization was complete according to schedule or not.

**Table 1: Demographic Profile of Respondents among selected villages**

| Sociodemographic Variables | Count (N) | % |
|---|---|---|
| *Type of Attendant* | | |
| Parent of a child | 582 | 95.3 |
| Pregnant | 29 | 4.7 |
| *Participant's relation to the child* | | |
| Mother | 489 | 80.0 |
| Father | 81 | 13.3 |
| Guardian | 41 | 6.7 |
| *Age of the Child* | | |
| *Below 1 year* | 64 | 10.5 |
| 1 year | 100 | 16.4 |
| 2 years | 165 | 27.0 |
| 3 years | 121 | 19.8 |
| 4 years | 96 | 15.7 |
| 5 years | 65 | 10.7 |
| *Mother's age* | | |
| 18-20 years | 35 | 5.7 |
| 20-25 years | 267 | 43.7 |
| 26-30 years | 259 | 42.4 |
| 31-35 years | 44 | 7.2 |
| 36-40 years | 6 | 1.0 |
| *Father's age* | | |
| 21-25 years | 72 | 11.8 |
| 26-30 years | 269 | 44.0 |
| 31-35 years | 205 | 33.6 |
| 36-40 years | 51 | 8.3 |
| 41-45 years | 14 | 2.3 |
| *Mother's Qualification* | | |
| Not Educated | 117 | 19.2 |
| Below SSLC / 10$^{th}$ | 200 | 32.6 |
| SSLC / 10$^{th}$ | 140 | 23.0 |
| PUC / 12$^{th}$ | 114 | 18.6 |
| Diploma | 1 | 0.2 |
| Graduate | 36 | 5.9 |
| Postgraduate | 3 | 0.5 |
| *Father's Qualification* | | 19.1 |
| Not Educated | 119 | 18.6 |
| Below SSLC / 10$^{th}$ | 113 | 34.3 |

| | | |
|---|---|---|
| SSLC / 10th | 209 | 13.8 |
| PUC / 12th | 84 | 2.7 |
| Diploma | 16 | 10.8 |
| Graduate | 66 | 0.7 |
| Postgraduate | 4 | |
| *Mother's Occupation* | | |
| Daily wages | 6 | 1 |
| Farmer | 46 | 7.5 |
| House wife | 531 | 87 |
| Govt. Job | 3 | 0.4 |
| Kirana shop | 4 | 0.6 |
| Private Employee | 7 | 1.2 |
| Student | 2 | 0.3 |
| Tailor | 3 | 0.4 |
| Teacher | 9 | 1.6 |
| *Father's Occupation* | | |
| Chairman | 2 | 0.3 |
| Daily wages | 55 | 9 |
| Driver | 49 | 8 |
| Farmer | 354 | 58 |
| Finance | 1 | 0.2 |
| Govt. Job | 12 | 2 |
| Kirana Shop | 3 | 0.5 |
| Own Business | 55 | 9 |
| Private Employee | 55 | 9 |
| Teacher | 21 | 3.3 |
| Unemployed | 1 | 0.2 |
| Watchman | 3 | 0.5 |
| *Annual Income of Family* | | |
| Below 1 Lakh | 399 | 65.3 |
| 1 -2 Lakhs | 57 | 9.3 |
| 2-3 Lakhs | 78 | 12.8 |
| 3-4 Lakhs | 38 | 6.2 |
| 4-5 Lakhs | 19 | 3.1 |
| Above 5 Lakhs | 20 | 3.3 |
| *Status* | | |
| High | 44 | 7.2 |
| Middle | 167 | 27.3 |
| Low | 400 | 65.5 |

Table 1 shows the Demographic profile of respondents among the selected villages. Majority of the respondents were parents having at least one child (95.3%) and most of them were mothers (80%). Majority of the Mothers have completed their schooling below SSLC / 10th (32.6%) and many of the fathers have completed at least SSLC / 10th (34.3%). Occupation of most of the Mothers was Housewife (87%) and Fathers was Farming (58%). Annual income of most of the families was Below 1 Lakh (65.3%) and many of the respondents belonged to Lower Class (65.5%).

Figure 1 depicts the parent's Source of vaccine information in which both the parent's answered that Primary Health Care centers (63%), Ministry of Health – Anganawadis (14%) were their main source of vaccine information.

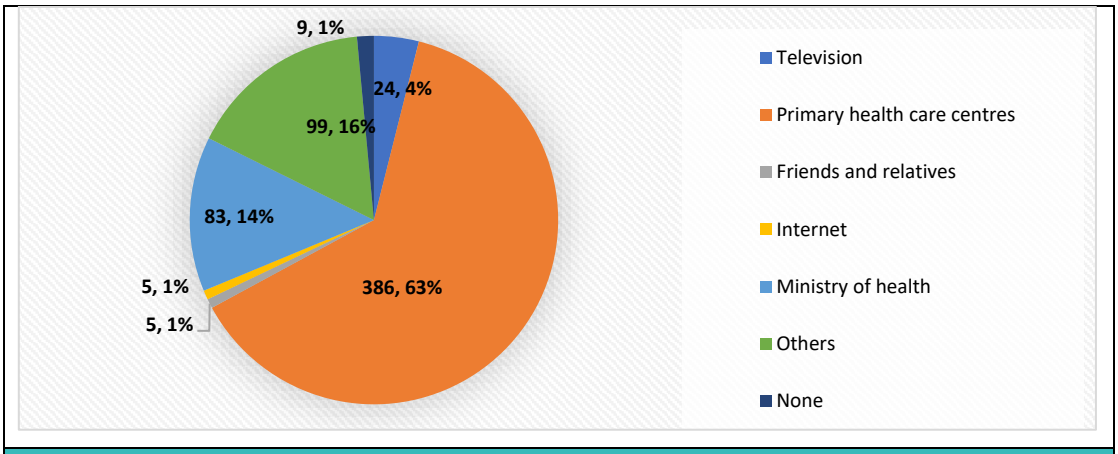


**Figure 1:** Parent's Source of Vaccine Information

Table 2 shows parents' knowledge about vaccination. Most of the parents know the importance of vaccination, their beneficial effects, and harmful effects. Majority of them know that vaccines are same for both male and female children. Parents had a good knowledge that vaccines are only given to children after a long and careful review by scientists, doctors, and healthcare professionals. Majority of the parents had knowledge that vaccinations reduce death and disability in the child. Parents source of information was enquired in the knowledge section of questionnaire which is demonstrated in Figure 1.

**Table 2: Parent's Knowledge about vaccination**

| Questionnaire | Response | Count | % |
|---|---|---|---|
| 1. Has your child received all the mandatory vaccines up to date? | Yes | 551 | 90.18 |
| | No | 19 | 3.11 |
| | Don't Know | 41 | 6.71 |
| 2. Do you know the importance of vaccination in children? | Yes | 424 | 69.39 |
| | No | 139 | 22.75 |
| | Don't Know | 48 | 7.86 |
| 3. Do you know the correct age at which child vaccination is started? | Yes | 323 | 52.86 |
| | No | 218 | 35.68 |
| | Don't Know | 70 | 11.46 |
| 4. Do you know that vaccinations in childhood prevent infectious disease? | Yes | 382 | 62.53 |
| | No | 135 | 22.1 |
| | Don't Know | 94 | 15.38 |
| 5. Do you know that vaccinations reduce death and disability in children? | Yes | 350 | 57.28 |
| | No | 129 | 21.12 |
| | Don't Know | 132 | 21.60 |
| 6. Do you know that even a healthy child needs to be vaccinated? | Yes | 329 | 53.85 |
| | No | 131 | 21.44 |
| | Don't Know | 151 | 24.71 |
| 7. Do you know that vaccines have more beneficial effects that harmful effects? | Yes | 308 | 50.41 |
| | No | 124 | 20.29 |
| | Don't Know | 179 | 29.30 |
| 8. Do you know that both male and female children have same vaccination schedule? | Yes | 309 | 50.57 |
| | No | 150 | 24.55 |
| | Don't Know | 152 | 24.88 |
| 9. Do you know that vaccinations are only given to children after a long and careful review by scientists, doctors, and healthcare professionals? | Yes | 277 | 45.34 |
| | No | 169 | 27.66 |
| | Don't Know | 165 | 27.00 |
| 10. Do you know that even child with cold and fever can be vaccinated? | Yes | 112 | 18.33 |
| | No | 342 | 55.97 |
| | Don't Know | 157 | 25.70 |
| 11. Do you have a source of information about vaccination? | Yes | 602 | 98.5 |
| | No | 9 | 1.5 |

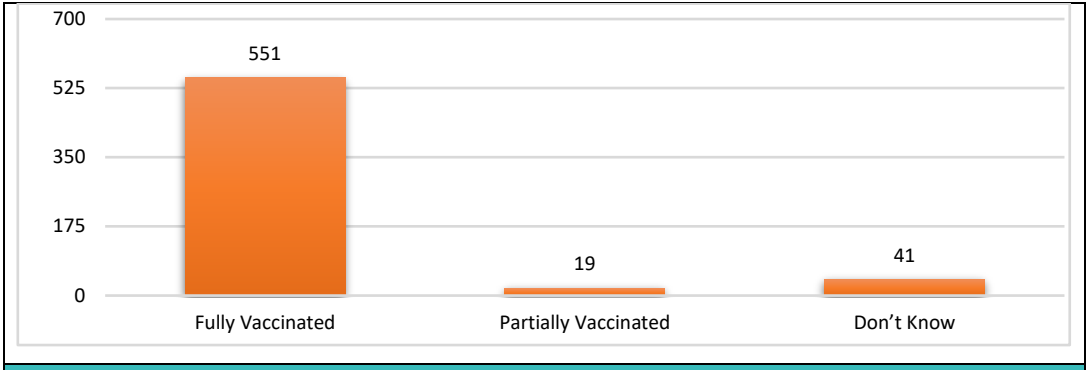


**Figure 2:** Vaccination status of child up to date

Figure 2 shows the Vaccination status of child up to date and Figure 3 shows the number of children's who had Adverse events following vaccination.

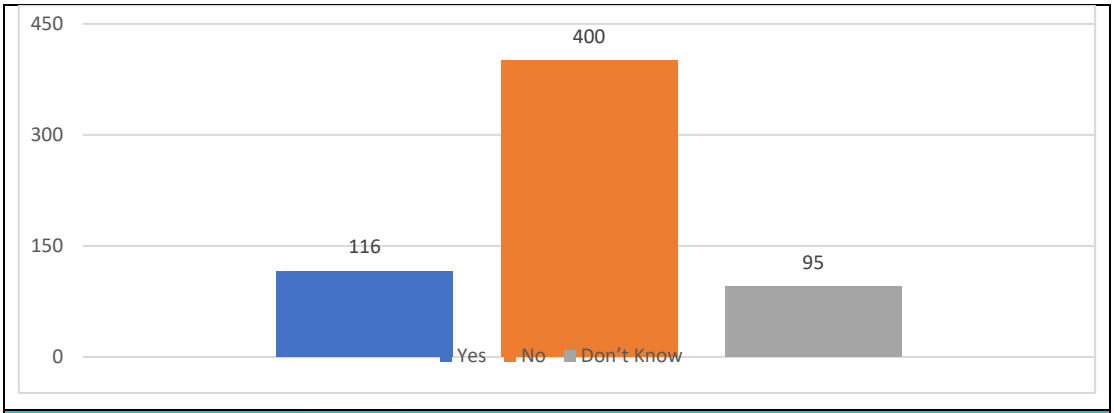


**Figure 3:** Adverse events following vaccination.

**Table 3: Parent's Attitude about vaccination**

| Questionnaire | Response | Count | % |
|---|---|---|---|
| 1. Do you feel that it is safe to have your child vaccinated?[10] | Yes | 597 | 97.71 |
| | No | 3 | 0.49 |
| | Don't Know | 11 | 1.80 |
| 2. Do you support the vaccination program designed by the ministry of health and family welfare? [10] | Yes | 467 | 76.43 |
| | No | 77 | 12.60 |
| | Don't Know | 67 | 10.97 |
| 3. Do you advice your relatives and family to vaccinate their children? | Yes | 435 | 71.19 |
| | No | 158 | 25.86 |
| | Don't Know | 18 | 2.95 |
| 4. Do you think it is important to follow vaccination schedule? [10] | Yes | 360 | 59.08 |
| | No | 87 | 14.24 |
| | Don't Know | 163 | 26.68 |
| 5. Will you stop vaccination due to temporary side effects occurred after previous dose? | Yes | 111 | 19.17 |
| | No | 395 | 64.65 |
| | Don't Know | 105 | 17.18 |
| 6. Did you face any reactions from your family members regarding your child's vaccination? | Yes | 51 | 8.35 |
| | No | 538 | 88.05 |
| | Don't Know | 22 | 3.6 |

Table 3 shows parents' attitude regarding vaccination. Most of the parents fell safe when their child gets vaccinated, many of them supports the vaccination programme organized by MoHFW. Majority of the parents' advice their relatives and family to vaccinate their children and think it is important to follow vaccination schedule. The parents also answered that they don't stop vaccination due to temporary side effects occurred after the previous dose of vaccine and the parents did not face any reactions from their family members regarding their child's vaccination. Figure 4 shows Parents attitude and support to vaccination program designed by the ministry of health and family welfare.

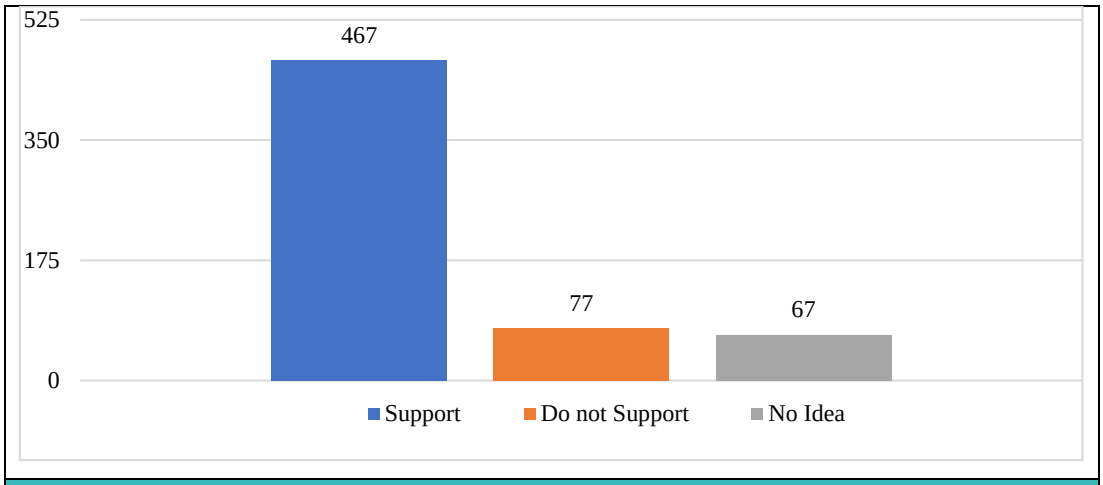


**Figure 4:** Parents support to vaccination program designed by the ministry of health and family welfare.

**Table 4: Parent's Practice about vaccination**

| Questionnaire | Response | Count | % |
|---|---|---|---|
| 1. Whether your child received mandatory childhood vaccination? | Yes | 551 | 90.18 |
| | No | 19 | 3.11 |
| | Don't Know | 41 | 6.71 |
| 2. Do you look for vaccines other than those recommended by the government? | Yes | 137 | 22.42 |
| | No | 374 | 61.21 |
| | Don't Know | 100 | 16.37 |
| 3. Do you use pain relievers to relieve swelling and pain after having your child vaccination?[10] | Yes | 304 | 49.75 |
| | No | 289 | 47.30 |
| | Don't Know | 18 | 3.95 |
| 4. Did the health care workers inform you about the dose of vaccine and your next vaccine schedule while receiving the vaccine? | Yes | 467 | 76.43 |
| | No | 89 | 14.57 |
| | Don't Know | 55 | 9 |
| 5. Did your child develop any problems after vaccination? | Yes | 116 | 18.99 |
| | No | 400 | 45.47 |
| | Don't Know | 95 | 15.54 |
| 6. Whether your child immunization is complete according to the schedule? | Yes | 470 | 76.92 |
| | No | 73 | 11.95 |
| | Don't Know | 68 | 11.13 |
| 7. Did you inform the doctor or health care workers about any side effects seen in your child after vaccination? [11] | Yes | 306 | 50.08 |
| | No | 251 | 41.08 |
| | Don't Know | 54 | 8.84 |
| 8. Do you have any instance of missed dose? | Yes | 19 | 3.11 |
| | No | 551 | 90.18 |
| | Don't Know | 41 | 6.71 |

Table 4 shows parents Practice about vaccination. Most of the parents give free vaccines provided by Government to their child. Majority of them use pain relievers like Paracetamol to their children after vaccination. Most of the children did not develop any reactions after vaccination and majority of the parents informed the doctors or health care workers regarding the side effects. There were only few instances of missed dose. Figure 5 shows Parents practice about importance to follow vaccination schedule.

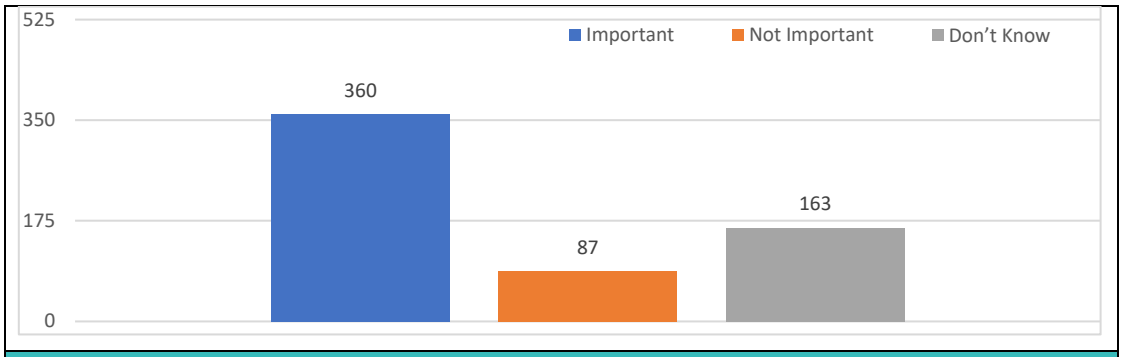


**Figure 5:** Parents practice about importance to follow vaccination schedule

Each question answered by the parents under the Knowledge, Attitude and Practice section of the questionnaire was scored. A score of 1 was given for correct answer and negative and uncertain answer was scored 0. The score was tabulated to calculate the level of significance using Pearson Chi-Square test.

The data was analyzed and interpreted by using descriptive and inferential statistics using latest version of SPSS software according to the objectives of the study. A thorough statistical study using SPSS version 22 was done and by applying statistical tools like Pearson Chi-Square test with 5% significance it was inferred that the objectives of the study were fulfilled. The Knowledge, Attitude and Practice of parents was significant at 5% significance and at p-value <0.001

## CONCLUSION:

In our study we conclude that a most of the parents in the selected rural areas were not aware about the vaccination and its uses. The knowledge of parents regarding vaccination was 59.11%, the attitude score was 76.54%, the practice score was 78.49%. Which signifies that the parents in the selected rural areas had a poor knowledge regarding vaccination, the attitude of parents regarding vaccination was average and the practice of vaccination was improved only because of the good efforts done by the MoHFW and Universal Immunization Programme through Anganawadis.

Parents believe that their decisions only affect their family, but in broad sense these individual decisions are affecting their community. Some of the roles which pharmacists play in improving the vaccination coverage are: Improving both the quality and quantity of the delivery of vaccination services, increasing community awareness, participation, and education, improving disease monitoring and vaccination coverage, developing new or improved vaccines, and improving the use of vaccines.

Lower literacy rates of parents in rural areas is a matter to worry. Some of them do not know about the disease for which the child is being immunized. Although many parents do not know the timing of vaccination but some of them follow the immunization card and come accordingly to the vaccination centers.

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**CONFLICT OF INTEREST:** The authors declare No Conflict of Interest.

**ETHICS STATEMENT:** The study was initiated after obtaining Ethical clearance from the concerned Institutional Ethics Committee.

**LIMITATIONS:** This study provides the extent of Parents KAP towards vaccination in Kalaburagi district of Karnataka, India and cannot be correlated with other parts of rural India.

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