International Journal of Community Medicine and Public Health
Kuruvilla BS et al. Int J Community Med Public Health. 2021 Jul;8(7):3506-3511
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: https://dx.doi.org/10.18203/2394-6040.ijcmph20212610

Original Research Article

Perceptions regarding childhood immunization among mothers in Kunnukara Panchayat, North Paravur, Ernakulam, Kerala

Babita Susan Kuruvilla, Vinu Cherian, Ann Mary Thomas, Brilly M. Rose, Alexander John*

Department of Community Medicine, SNIMS, Chalakka, Kerala, India

Received: 03 May 2021
Accepted: 02 June 2021

***Correspondence:**
Dr. Alexander John,
E-mail: bskajhod@gmail.com

ABSTRACT

Background: Vaccines have been claimed to be one of the most important contributions for the relief of human misery and the spectacular increase in life expectancy. Worldwide, an estimated 1.4 million children under the age of five died in 2010 due to vaccine preventable diseases. Objective of the study was to determine the immunization perception and practice regarding immunization among mothers of children from 1-5 years in Paravur taluk, Ernakulam district.
Methods: This cross-sectional study was done among the mothers of children from 1-5 years of age in Kunnukara panchayat. The panchayat has 15 wards. 3 wards were chosen by simple random sampling. All the houses having mothers of children from one to five years were surveyed. The data collected was entered in MS excel and analysed using Statistical package for social sciences (SPSS) 20 software.
Results: Mean age of mothers is 29. The most common source of information regarding vaccination was obtained through health workers (80.3%). 72% mothers knew that OPV prevents polio and 53.6% mothers knew about the frequency of giving polio vaccination to their children. Ninety two percent mothers agreed that vaccines prevent the diseases. 100% mothers have given immunization to their children.
Conclusions: Perception regarding vaccination was 95.2% and practice of immunization was 92.3%. There was a statistically significant association between (female gender of child v/s practice of immunization) and (perceptions regarding vaccination v/s practice of immunization).

Keywords: Immunization, Mothers, Perception, Practice, Vaccines

INTRODUCTION

Immunization is a proven cost-effective preventive measure which has considerably reduced the burden of infectious diseases. In addition, it has surged up life expectancy and improved the quality of life tremendously. Vaccines are biological substances that confer acquired immunity to a particular disease.

WHO has launched in 1974, an Expanded Programme of Immunization (EPI) against six vaccine preventable diseases (VPD) to reduce childhood mortality and morbidity viz BCG, DPT, OPV, TT .It came into practice in India in 1978.[1] In 2010, an estimated 1.7 million people around the world died of VPD of which 1.4 million children were under five years of age.[2] In India, infants were immunized against seven vaccine preventable disease viz Tuberculosis, Diphtheria, Pertussis, Tetanus, Poliomyelitis, Measles and Hepatitis B under National Immunization Programme. In addition to DPT and Hepatitis B vaccine, Haemophilus Influenza type B was a new addition, given together as Pentavalent vaccine which started in 2009. Primary immunization is essential in preventing the mortality and morbidity due to VPDs. Fully immunized child is the one who has received all vaccines

recommended in the National Immunization Schedule by one year of age.[3] In India, according to latest census, infant mortality is 39.4/1000 live births. Despite the continued efforts of government and other health agencies, a large proportion of infants in India remain partially immunized or unimmunized. Our country has 10 million such children. National Family Health Survey (NFHS)-4 (2015-2016) reports that only 62% children received primary vaccines and in Kerala, it is 82%.[4] Negative parental perceptions of vaccination are also a barrier to timely immunization.[2]

In the state of Kerala, diphtheria outbreaks alarmed the general public between the years 2015 and 2017. Moreover, perception and practice of immunization was inadequate in those areas.[4] It is a well-known fact that successful immunization depends on parents' positive attitude and knowledge. Therefore, in this context, this study was conducted to know the perceptions regarding vaccination and practice of immunization among mothers in Paravur Taluk, Ernakulam, Kerala. Factors determining the practice of immunization were also determined.

METHODS

A community-based cross - sectional study was conducted in Kunnukara panchayat in Paravur Taluk of Ernakulam district for a period of one month. The voluntary participants were mothers with children between 1- 5 years of age who have been residing in Kunnukara Panchayat for a period of not less than six months. If there were more than a child between 1- 5 years, the first child was selected. Those Mothers who had a pre-existing severe psychiatric condition or didn't have immunization card/any hospital records were excluded. Sample size was obtained from a KAP study, where p (knowledge level regarding vaccine) was 77%.[5] The calculated sample size by the above-mentioned formula was found to be 120. Sample size taken was 125. Simple random sampling was used to choose three wards from a total of 15 wards from Kunnukara Panchayat. All the houses having mothers with children from one to five years were surveyed. The study participants were interviewed using a semi - structured questionnaire comprising of-

Socio-demographic variables: Age, education, occupation, income and source of information regarding immunization among the respondents.

Immunization status: Immunization up to date, fully immunized, partially immunized, unimmunized.

Data was collected from house to house survey with the help of semi – structured questionnaire. Collected data was entered in MS Excel and analysed using Statistical package for social sciences (SPSS) 20 software. Frequencies and percentages were calculated. Chi- square test was used to analyse the association between socio-demographic details and knowledge, attitude and practice regarding immunization. P<0.05, was considered statistically significant. Approval was obtained from the institutional research and ethical committee. Written consent was obtained from the participants prior to the study.

RESULTS

A study was conducted among 125 mothers in Kunnukara Panchayat, Paravur Taluk, Ernakulam district. Among the 125 families, 87 (69.6%) were nuclear families and the rest 38 (30.4%) were joint families. Fifty-three (42.4%) of the mothers were Muslims. Out of the 125 children surveyed, the number of male children was 74 (59.2%) whereas the female children was 51 (40.8%).

Table 1: Sociodemographic variables (n=125).

Variables		N (%) or (mean ±SD)
Mothers age		29.08 ±4.655
Age of Child		3.42±1.259
Gender	Male	74 (59.2%)
	Female	51 (40.8%)
Religion	Hindu	48 (38.4%)
	Christian	24 (19.2%)
	Muslim	53 (42.4%)
Type of Family	Nuclear Family	87 (69.6%)
	Joint Family	38 (30.4%)
Occupation of the mother	Employed	25 (20.0%)
	Unemployed	64 (51.2%)
	Presently not Employed	36 (28.8%)
Marital Status of the mother	Married	124 (99.2%)
	Widow	1 (0.8%)
Decision maker	Mother	86 (68.8%)
	Father	36 (28.8%)
	Both	3 (2.4%)
Monthly income	Upper High (Rs 7008 and above)	77 (61.6%)
	High (Rs 3504 - 7007)	22 (17.6%)
	Upper Middle (Rs 2102 - 3503)	8 (6.4%)
	Lower Middle (Rs 1051 - 2101)	13 (10.4%)
	Poor (Below Rs 1050)	5 (4.0%)

It was observed that more than half of the mothers surveyed i.e. 64 (51.2%) were unemployed. 124(99.2%) women are currently married and one mother was a widow (0.8%). Majority of the decision-making regarding vaccination were taken by the mother- 86 (68.8%), 36 families (28.8%) considered the father as the decision maker and three families (2.4%) took the decision together. According to revised Modified B G Prasad socio-economic classification scale 2019, majority of the families 77 (61.6%) belong to upper high class, 22 (17.6%) belong to high class, 8 (6.4%) belong to upper middle class, 13

(10.4%) belong to lower middle class and 5 (4.0%) belong to poor category.

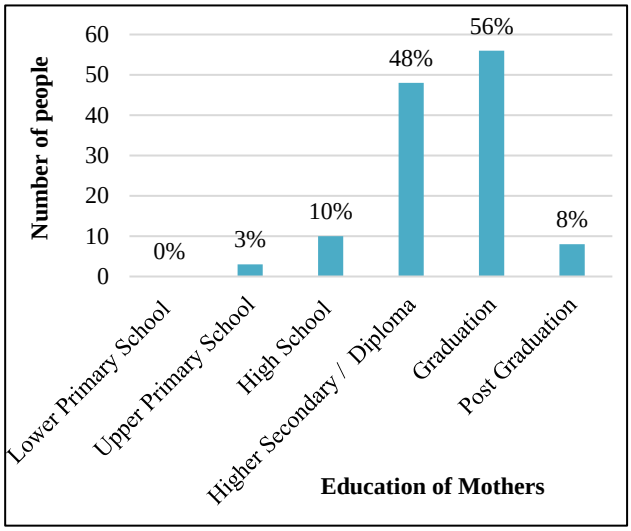

Figure 1: Educational status of mother.

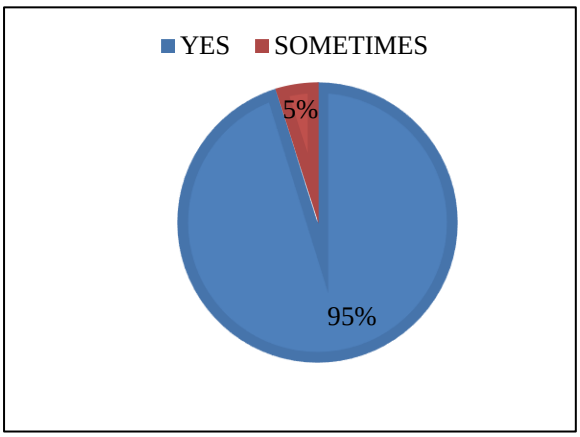

Figure 2: Perception of respondent regarding vaccination.

Table 2: Uptake of vaccines and their scheduled timings.

Vaccines		Disease	Timing
BCG	Yes	44(35.2%)	94(75.2%)
	No	81(64.8%)	31(24.8%)
Hepatitis B	Yes	53(42.4%)	47(37.6%)
	No	72(57.6%)	78(62.4%)
OPV	Yes	90(72%)	67(53.6%)
	No	35(28%)	58(46.4%)
IPV	Yes	46(36.8%)	19(15.2%)
	No	79(63.2%)	106(84.8%)
Pentavalent	Yes	11(8.8%)	13(10.4%)
	No	114(91.2%)	112(89.6%)
MR	Yes	54(43.2%)	36(28.8%)
	No	71(56.8%)	89(71.2%)
Vitamin A	Yes	34(27.2%)	20(16%)
	No	91(72.8%)	105(84%)
OPV booster	Yes	47(37.6%)	23(18.4%)
	No	78(62.4%)	102(81.6%)

Table 3: Positive perceptions regarding immunization among mothers.

Variables	Positive response frequency (%)
Vaccines are certainly beneficial and can prevent diseases	119 (95.2%)
Vaccines cannot be replaced by other alternatives	109 (87.2%)
Adverse reaction following immunization (AEFI) has not prevented mothers to rethink about immunization	110 (88.0%)
Respondents in future will advise their relatives regarding the usefulness of vaccines	116 (92.8%)
Vaccines are still needed even if the disease prevented by that particular vaccine is no longer prevalent	42 (33.6%)
Male and Female child should get equal preference for vaccination	114 (91.2%)
Vaccination is definitely not against ones' faith	123 (98.4%)
Family members advise mothers regarding the benefits of uptake of vaccines	119 (95.2%)
Cost of vaccine will not prevent mothers from getting their children immunised	117 (93.6%)

Table 4: Practice of immunization.

Variables		Frequency (%)
Any instance of missed vaccination?	Yes	11(8.8%)
	No	114(91.2%)
Whether sought medical help in case of ADR	Yes	13(10.4%)
	No	112(89.6%)
Whether participated in pulse polio immunization	Yes	120 (96%)
	No	5 (4%)
Whether Long Distance has hindered vaccination	Yes	1 (0.8%)
	No	122 (97.6%)
	Sometimes	2 (1.6%)
Ever delayed vaccinating your child with newly introduced vaccine	Yes	14 (11.2%)
	No	98 (78.4%)
	Sometimes	13 (10.4%)

Eight mothers (6.4%) were postgraduates, 56 (44.8%) were graduates, 48 (38.4%) completed their higher

secondary or diploma, 10 (8.0%) studied till high school and 3 (2.4%) completed upper primary school. No mother was found to have an education lower than upper primary. Of the 125 respondents, majority, 119 (95.2%) strongly believed that vaccines are beneficial and 6 (4.8%) of them responded that vaccines may be beneficial. Among the 125 respondents, majority i.e., 94 (75.2%) of the respondents had good knowledge regarding the schedule of BCG and only 44 (35.2%) were aware of the disease prevented by the vaccination.

Knowledge regarding the schedule of Hepatitis B vaccine was poor (37.6%). Only 53 (42.4%) of the respondents knew that Hepatitis B could be prevented by this vaccination.

Most of the respondents, 90 (72%) knew that OPV was given to prevent Polio and majority of them, 122 (97.6%) had vaccinated their children with OPV. Less than half of the study population, 36.8%, was unaware of the disease (Polio) prevented by IPV and only 15.2% of them had knowledge regarding the schedule of IPV. Regarding Pentavalent vaccination, among the 125 respondents, 13(10.4%) of them were aware of the schedule and only 11 (8.8%) of them were aware of the disease (Diphtheria, Pertussis, Tetanus, Haemophilus B, Hepatitis B) prevented by this vaccine.

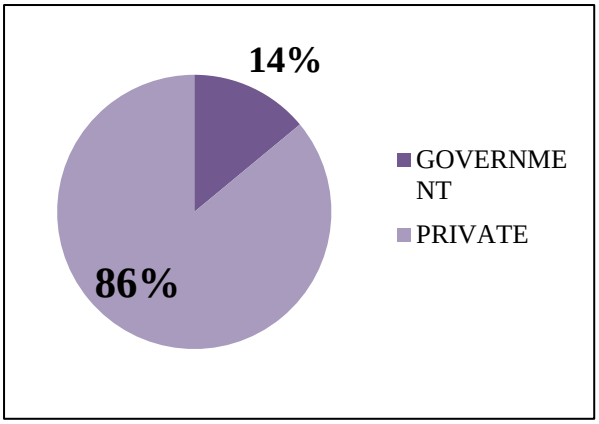

Figure 3: Place of immunization.

43.2% of the mothers knew the reason for vaccinating their children with MR and a very few, 28.8% were aware of the schedule. Thirty-four (27.2%) of them were aware of the Vitamin A supplementation and only 20(16%) of them knew about its schedule. Forty-seven (37.6%) of them had knowledge about the OPV booster vaccine but 102 (81.6%) of them were unaware of the timing of the vaccine.

Among 125 mothers, majority 114(91.2%) had not missed any scheduled vaccines whereas 11(8.8%) mothers failed to do so due to various reasons like illness, flood and unavailability of vaccine.

And 112 (89.6%) children had not experienced any reactions to vaccines while 13 (10.4%) had experienced reactions.

Last of all, 120 (96%) out of 125 mothers had been a part of Pulse Polio Program while 5 (4%) had not been due to reasons like lack of information, illness and being out of station.

One hundred and seven (86%) mothers preferred Government Hospital for vaccinating their children while 18 (14%) mothers resorted to private hospitals for the vaccination of their wards.

Table 5: Practice of giving vaccines.

Vaccines		Frequency (%)
BCG	Yes	123 (98.4%)
	No	2 (1.6%)
hepatitis B	Yes	117 (93.6%)
	No	8 (6.4%)
OPV	Yes	122 (97.6%)
	No	3 (2.4%)
IPV	Yes	110 (88%)
	No	15 (12%)
pentavalent	Yes	122 (97.6%)
	No	3 (2.4%)
MR	Yes	113 (90.4%)
	No	12 (9.6%)
Vitamin A	Yes	100 (80%)
	No	25 (20%)
OPV booster	Yes	92 (73.6%)
	No	33 (26.4%)

Among 125 mothers, 122(97.6%) of them had not felt the distance to the nearby vaccination centre was a hindrance to delay the vaccination for their children whereas the rest felt it posed inconvenience.

Table 6: Association between sociodemographic variables and practice.

Variables		Practice of immunization		
		Poor practice	**Good practice**	**P value**
Education	Upper primary school and High school	2 (15.4%)	11(84.6%)	0.877
	Higher secondary/ diploma	5 (10.4%)	43 (89.6%)	
	Graduation and Post graduation	7 (10.9%)	57 (89.1%)	
	20 – 30	11 (12.8%)	75 (87.2%)	0.639

Continued.

Variables		Practice of immunization		
		Poor practice	Good practice	P value
Mothers age	30 – 40	3 (8.3%)	33 (91.7%)	
	Above 40	0 (0.0%)	3(100.0%)	
Gender of the child	Male	12 (16.2%)	62(83.8%)	
	Female	2 (3.9%)	49(96.1%)	0.032*
Type of family	Nuclear Family	9 (10.3%)	78 (89.7%)	
	Joint Family	5 (13.2%)	33(86.8%)	0.646
Religion	Hindu	6 (12.5%)	42 (87.5%)	
	Christian	2 (8.3%)	22(91.7%)	0.869
	Muslim	6 (11.3%)	47(88.7%)	
Job of the mother	Employed	4 (16.0%)	21(84.0%)	
	Unemployed	5 (7.8%)	59(92.2%)	0.454
	Presently not Employed	5 (13.9%)	31(86.1%)	
Decision maker	Mother	8 (17.8%)	32(82.2%)	
	Father	0 (0.0%)	6(100.0%)	0.180
	Both	6 (8.1%)	68(91.9%)	
Marital status	Married	14 (11.3%)	110(88.7%)	0.721
	Widow	0 (0.0%)	1(100.0%)	
Monthly income	Upper High (Rs 7008 and above)	7(9.1%)	70 (90.9%)	
	High (Rs 3504 – 7007)	2 (9.1%)	20 (90.9%)	
	Upper Middle (Rs 2102 – 3503)	3 (37.5%)	5 (62.5%)	
	Lower Middle (Rs 1051 – 2101)	2 (15.4%)	11(84.6%)	0.143
	Poor (Below Rs 1050)	0 (0.0%)	5(100.0%)	

Out of 125 mothers, 98 (78.4%) mothers were prompt in administering vaccines to their wards.

Among the 125 respondents, majority, 123 (98.4%) of them had vaccinated their children with BCG. 122 (97.6%) of the mothers showed high practice of OPV and pentavalent vaccination.

Table 7: Association between perception and practice.

Need for vaccines that are no longer prevalent	Practice of immunization		Total	P value
	Poor practice	Good practice		
Positive perception	13 (15.7%)	70 (84.3%)	83	0.026*
Negative Perception	1 (2.4%)	41 (97.6%)	42	

*P<0.05 – significant

Mothers with a positive perception regarding vaccination had good practice of immunization compared to those with negative perception. This difference was statistically significant (p=0.026).

DISCUSSION

In our study, majority of the mothers (95.2%) believed that vaccines were beneficial .This is found to be similar to a study conducted among the mothers in a tertiary care hospital in Kollam, Kerala where it was 93.8%.Our study also showed that 80.8% of the mothers have acquired information regarding immunization from health workers which is much higher compared to the study conducted in Kollam (35%).This might be due to better accessibility of the mothers to health workers in our study area.[6]

In this study, 95.3% mothers showed positive perceptions towards immunization of their children. Result obtained was higher than a study conducted in Mangalore, Karnataka where about 89% of mothers showed positive perceptions towards immunization which was similar to our study. This might be due to higher literacy rates among mothers in Kerala compared to those in Mangalore.[7]

Among 125 mothers, majority (91.2%) had not missed any vaccines while 8.8% failed to do so due to various reasons like infirmities, natural calamities and unavailability of vaccine. In a study conducted in North India by Kumar et al, 18% were completely immunised whereas majority (82%) missed vaccination. Most common reasons included lack of information regarding immunization and its subsequent dose, fear of side effects, and a certain misconception that only oral polio vaccine is required.[8]

Similar findings were reported by the study conducted by Tariq et al. It showed that majority of the mothers had a good perception towards immunization and most of them preferred to get their children vaccinated in Government hospitals. This was because the health care workers had

played a leading role in bringing awareness about immunization in rural areas. Free supply of vaccines to their children was another main reason which made them do so.[9]

In our study among 125 mothers in Kunnukara panchayat, Paravur Taluk, 88% had completely immunized their children while, 12% had missed the vaccinations. However, another study conducted in the same taluk showed that the proportion of children fully immunized was 96.3%. The slightly reduced immunization status in our study might be due to socio-economic factors.[10]

This study showed that 92.3% mothers practiced immunization. Similar findings were reported by Lamiya in her study which showed that 88% mothers practiced immunization. This might be due to the role of health workers and mass media in spreading awareness regarding immunization in Kerala. [11]

CONCLUSION

The mean age of respondents was 29±4. Education of the general public is an integral part of a prevention-oriented approach to health and disease problems, and the basis of all education is communication. Education can help to improve good perceptions among the public which will ultimately determine the behavioural practice among the general folks. In this study, perception regarding vaccination is 95.2% and practice of immunization is 92.3%. This study showed that good perception regarding childhood immunization among mothers had led to improved practice of immunization in their children. There was a statistically significant association between female children and practice of immunization. There was also a statistically significant association between perceptions regarding vaccination and practice of immunization.

Recommendations

Individual attention must be given to those who missed even one vaccination. Perceptions regarding immunization can be further improved through health education sessions.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Dharmalingam A, Raghupathy NS, Sowmiya M, Amudharaj D, Jehangir HM. Immunization knowledge, attitude and practice among mothers of children from 0 to 5 years. International Journal of Contemporary Pediatrics. 2017;04(03):783-9.
2. Mahalingam S, Soori A, Ram P, Achappa B, Chowta M, Madi D. Knowledge, attitude and perceptions of mothers with children under five years of age about vaccination in Mangalore, India. Asian Journal of Medical Sciences. 2014;5(04):52-7.
3. Basti BD, Rajegowda RM, Varaprasad D, Pitchandi J. Assessment of immunization status among under five children in a census town of South India. International Journal of Community Medicine and Public Health. 2019;6(08):3266-73.
4. Adefolalu OA. Maternal knowledge, attitude and compliance regarding immunization of under five children in primary health care centres in Ikorodu Local Government Area, Lagos State. Journal of Clinical Sciences. 2019;16(01):7-14.
5. Nath B, Singh JV, Awasthi S, Bhushan V, Kumar V, Singh SK. KAP study on immunization of children in a city of North India- A 30 cluster survey; Online Journal of Health and Allied Sciences. 2008;7(01):2.
6. Aslami AN, Athira TK, Salim AK, Pillai AV, Asha TJ, Bency S et al. Assessment of Knowledge About Immunization of Under Five Children Among Mothers Attending Outpatient Department of Paediatrics. In A Tertiary Care Hospital in Kollam, Kerala, Journal of Evidence based Medicine and Healthcare. 2015;29(2):4191-200.
7. Angadi MM, Jose AP, Sorganvi V. A Study of Knowledge Attitude and Practices on Immunization of children in urban slums of Bijapurcity, Karnataka, India; Journal of Clinical and Diagnostic Research. 2013;7(12):2803-06.
8. Kumar D, Agarwal A, Gomber S. Immunization status of Children admitted to a Tertiary-care Hospital of North India: Reasons for Partial Immunization or Non-Immunization. Journal of Health, Population and Nutrition. 2010;28(3):300-4.
9. Wani RT, Dar H, Raina ZA. Knowledge, Attitude and Practice of Mothers with Children Under Five Years of Age about Vaccination. Journal of Medical Science and Clinical Research. 2019;5(07):24449-54.
10. Kizhatil A, Reshma, Hariharan HC, John A, Thomas AM, Padmanabhan G. Assessment of immunization coverage and associated factors among children in Paravur Taluk of Ernakulam district, Kerala, International Journal of Community Medicine and Public Health. 2019;06(08):3594-601.
11. Lamiya KK, Mundodan JM, Haveri SP. Knowledge Attitude and Practice among mothers of under-five children on immunization;International Journal of Community Medicine and Public health. 2019;6(03):1252.

Cite this article as: Kuruvilla BS, Cherian V, Thomas AM, Rose BM, John A. Perceptions regarding childhood immunization among mothers in Kunnukara Panchayat, North Paravur, Ernakulam, Kerala. Int J Community Med Public Health 2021;8:3506-11.