International Journal of Community Medicine and Public Health
Kaithery NN et al. Int J Community Med Public Health. 2018 Jul;5(7):2911-2915
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20182621

Original Research Article

Knowledge and practice of polio vaccination among mothers of infants attending community health centre of northern Kerala

Nivya Noonhiyil Kaithery*, Jayasree Anandabhavan Kumaran

Department of Community Medicine, Academy of Medical Sciences, Pariyaram, Kannur, Kerala, India

Received: 30 March 2018
Revised: 16 May 2018
Accepted: 17 May 2018

***Correspondence:**
Dr. Nivya Noonhiyil Kaithery,
E-mail: nivyapnk@gmail.com

ABSTRACT

Background: Poliomyelitis is a highly infectious disease caused by polio virus which invades the nervous system causing irreversible total paralysis. The aim of the study is to assess the knowledge and practice of mothers regarding polio vaccination.
Methods: It's a descriptive type of study conducted in mothers of Infants who had attended Community health centre of Kannur district during a study period of 2 weeks (June 1 to June 14, 2017). Written consent was obtained from the mothers. Data was collected using a semi structured questionnaire with 3 sections -demographic details, knowledge and practice. Data was analyzed and the results are expressed in terms of frequency and percentage.
Results: A total of 220 women were studied. Out of 220 mothers, 93.6% had satisfactory knowledge and 90.45% mothers had their child immunized up to age according to National Immunization Schedule. All of them were taking their children to government hospital for vaccination and their main source of knowledge were health workers.
Conclusions: In the present study, majority of the mothers had attended immunization class and had satisfactory knowledge. In order to achieve 100% vaccination coverage, we have to emphasize more on awareness campaigns.

Keywords: Polio, Immunization, Mothers

INTRODUCTION

Poliomyelitis is a highly contagious disease caused by polio virus. It can result in irreversible total paralysis.[1] Children under five years of age are mainly affected.

Cases have decreased from the estimated 350000 cases to 74 reported cases in 2015.[1] Three countries (Pakistan, Afghanistan and Nigeria) are still endemic to wild polio virus.[1] India was declared polio free by World Health Organization (WHO) during March 2014.[2] As part of preventing poliomyelitis, interruption of endemic wild polio virus (WPV) circulation was an essential, which was achieved by India during January 2011 to March 2012. Since our neighboring countries like Afghanistan, Pakistan are not polio free, India is still at the risk of developing polio.[2]

For a polio-free world, "Polio eradication and endgame strategic plan 2013-2018" was introduced by World Health Assembly.[3] According to this strategy, at least one dose of IPV should be introduced into routine immunization systems by the end of 2015. On April 25th 2016, India switched from trivalent OPV to bivalent OPV and withdrawn Sabin poliovirus type 2 vaccine.[4] At the same time inactivated poliovirus vaccine (IPV) was introduced into the routine immunization program.[4] Any reported case of vaccine-derived poliovirus type 2 (VDPV2) would be considered as a public health emergency necessitating monovalent type 2 oral vaccine, IPV or both.

Mainly there are two types of vaccine for polio. They induce immunity to polio, efficiently block transmission of wild poliovirus, and create Herd immunity.[5]

OPVs do not require health professionals as it is administered orally[5]. Following vaccination, the vaccine virus replicates in the intestine, gets excreted and can be spread to others in close contact. This helps in 'passive immunization' of people who have not been vaccinated in areas with poor sanitation.[5] In extremely rare cases (approx. 1 in every 2.7 million first doses of the vaccine) the live attenuated vaccine-virus in OPV can result in paralysis. Immunodeficiency can also lead to this in some cases.[5] IPV can be given as intramuscular or (0.1 ml) intra dermal injection and needs the help of a trained health worker for administration.[5] There is no such risk of VAPP with IPV as it is not a live vaccine. IPV prevents against paralytic disease caused by all three types of poliovirus and triggers an excellent immune response.[5] CDC recommends four doses of polio vaccine for the protection of the children.[6]

In spite of high immunization coverage of Kerala (82.1% NFHS4) compared to national average, there are several pockets of areas with low coverage. Immunization is essential in bringing up a healthy future generation and to reduce mortality and morbidities due to vaccine preventable diseases. There are various factors which influence the coverage of vaccination. Parent's understanding and perception is one such key factor. The aim of the study is to assess the knowledge and practice of mothers regarding polio vaccination.

METHODS

Study design

It is a descriptive type of study conducted during a study period of 2 weeks (June 1 to June 14, 2017)

Study setting

Community Health Centre in Kannur district of Northern Kerala

Study population

All Mothers of Infants who had attended Community Health Centre of Kannur district during the study period.

Data collection method

Written consent was obtained from the mothers. Data was collected using a semi structured questionnaire with 3 sections -demographic details, knowledge and practice scoring system was used to assess knowledge. Each of the knowledge questions were given scores, total score being 17. More than 8.5 considered to be satisfactory. Less than 8.5 considered to be not satisfactory.

Data was analyzed with software EPI INFO 7. All results expressed in terms of frequency and percentage.

RESULTS

A study was conducted among mothers of infants, who have attended Community Health Centre, Kannur district of Northern Kerala. A total of 220 women were studied. The mean age of mothers was 25.97±4 (in years).

Out of 220 mothers, 90.45% mothers had their child immunized up to age according to National Immunization Schedule. All of them were taking their children to government hospital for vaccination and their main source of knowledge was health workers.

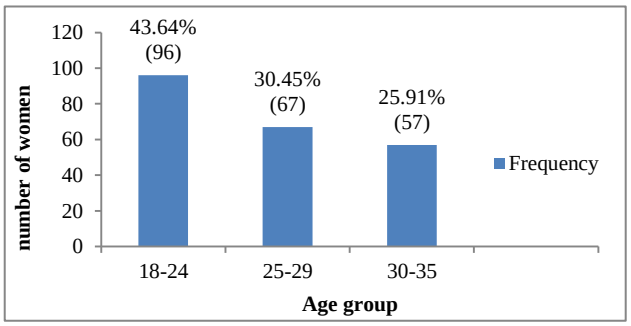

Figure 1: Distribution of mothers according to age.

Majority of the mothers (43.6%) belong to 18-24 years of age. Majority of the infants (59.55%) belong to 7-12 months of age.

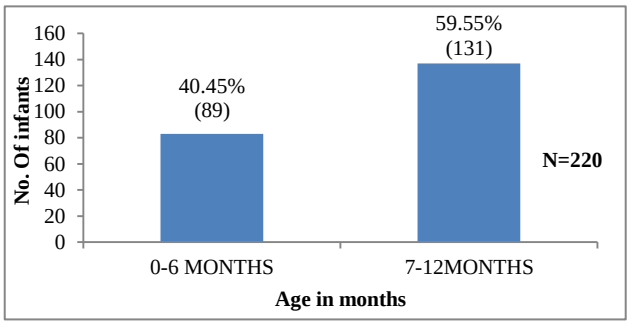

Figure 2: Distribution of infants based on age.

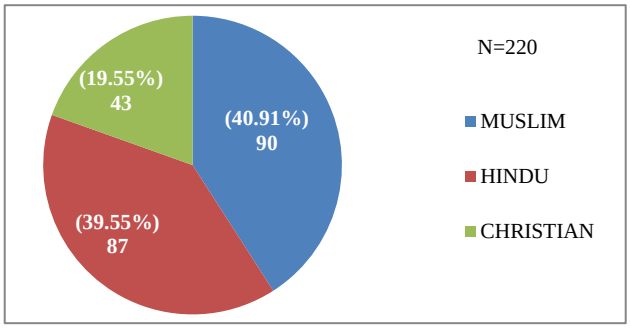

Figure 3: Distribution of mothers based on religion.

Majority of the mothers (40.9%) were Muslims. Majority of the mothers (68.9%) were multipara. Majority of the mothers (71%) have degree but 80.9% of them were not working. Health workers were the main source of knowledge (86%). Majority of the mothers (57%) take their child to CHC for immunization. Majority of the mothers had satisfactory knowledge (93.6%). Most of the mother (5.9%) said fever as the reason for not taking child for immunization.

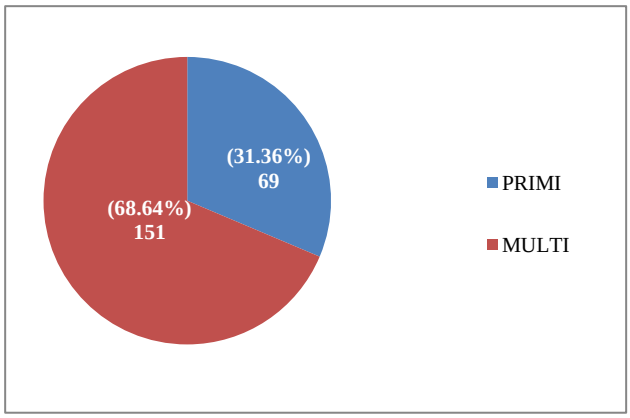

Figure 4: Distribution of mothers according to parity.

Table 1: Distribution of mothers according to education, income and occupation.

Education	High school/ +2	Degree	Post graduate
Percentage	24.55%(54)	71.36% (157)	4.09% (9)
Income	Less than 5000	5000-10000	More than 10000
Percentage	4.55% (10)	70.45% (155)	25.00% (55)
Occupation	Working	Not working	
Percentage	19.09% (42)	80.91% (178)	

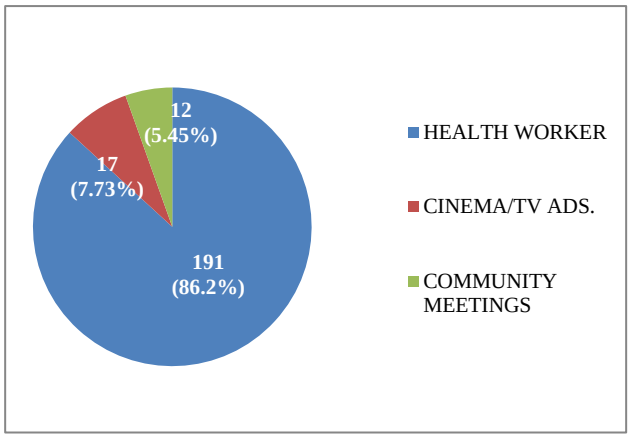

Figure 5: Distribution of mothers based on source of knowledge.

Table 2: Distribution of mothers according to over all knowledge on polio immunization.

Knowledge	
Satisfactory	**Not satisfactory**
93.64% (206)	6.36% (14)

Table 3: Distribution of mothers according to knowledge on polio immunizations.

Knowledge questions	No. of correct responses	Percentage (%)
1. Virus as causative organism	119	54.09
2. After effects of polio	162	73.64
3. Awareness about polio vaccines	220	100
4. Prevention of polio by vaccine	182	82.73
5. IPV introduction in immunisation schedule	199	90.45
6. Route of polio vaccine as oral	28	12.73
7. Route of polio vaccine as both oral & injection.	192	87.27
8. Doses of OPV	185	84.09
9. Doses of IPV	146	66.36
10. Schedule of OPV	190	86.36
11. Schedule of IPV	146	66.36
12. Reason for introducing IPV along with OPV	159	72.27

Table 4: Distribution of mothers according to practice.

Practice of mothers	Good practice	Percentage (%)
1. Immunised the child according to the schedule	199	90.45
2. Previous child immunised upto age (multiparous mothers){N=151}	151	100
3. Birth dose of OPV	220	100
4. Completed all 4 doses of opv (infants between 14 wks - 1 yr N=191)	180	94.24
5. IPV atleast one dose to present child	208	94.55
6. Completed all 2 doses of IPV (infants between 14 wks – 1yr N=191)	180	94.24

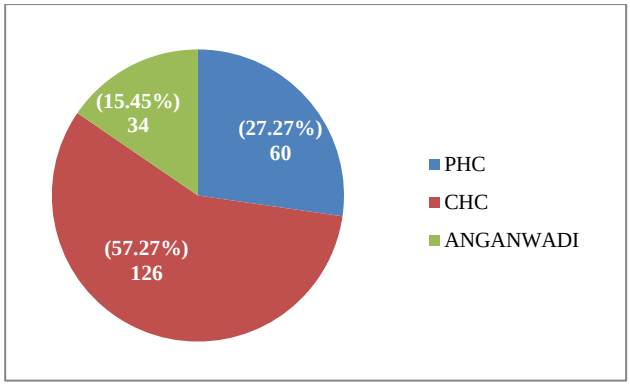

Figure 6: Distribution of mothers according to place of immunization.

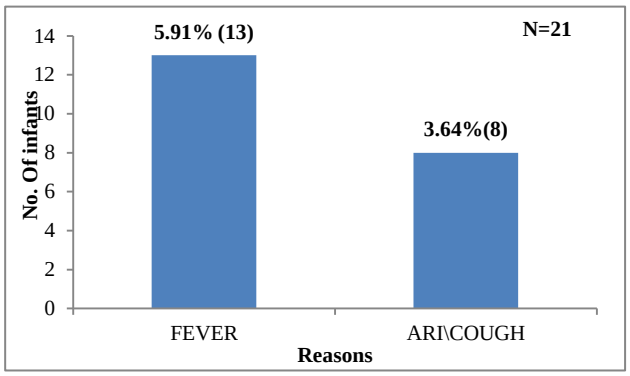

Figure 7: Reason for not taking polio vaccination.

DISCUSSION

In the present study, mean age of the mothers was 25.97±4 years which is similar compared to a study done by Sarada et al (27.3±3.9 years).[7] Majority of the mothers (68.6%) were multipara and belong to Muslim community(40.9%). About 24.5%, 71.65% and 4% of the mothers were educated up to high school, degree and post-graduation respectively. Whereas in a study done by Sarada et al 34%, 30.7% and 24% mothers had education up to graduation, high school and higher secondary respectively.[7] Health workers were the main source of information. This study showed 93.6% of the mothers had satisfactory knowledge which is very high compared to the study done by Khan et al, where only 38.8% of the participants exhibited good knowledge about polio.[8] About 73.64% of mothers knew paralysis of lower limb as the symptom, which is high (56%) compared to study conducted in rural area of Kannur near Anjarakandy and in highly affected areas of Pakistan (58.4%).[7,8]

About 87.73% of mothers were aware of IPV in the present study, which is very high compared to study done in south east Nigeria (47%).[9] Eighty seven percent of the mothers were aware that the route of polio vaccine as both oral and injection but in a study done by Sarada et al, 65.3% and 11.3% of the mothers told that the route of administration of polio vaccine as oral drops and as injection respectively.[7] In the present study, about 90.45% of mothers knew that IPV was recently introduced in national immunization schedule, which is in contrast to a study conducted in rural area of Kannur near Anjarakandy (14%).[7] About 90% of the mothers had immunized their child up to age in the present study. All of the mothers have taken the birth dose of OPV for their children. About 94.55% had given at least one of dose of IPV to their infants in this study whereas only 7.33% of mothers had practiced the same in a study conducted in rural Kannur near Anjarakandy.[7] 94.24% of mothers in the study have completed all four doses of OPV and all two doses of IPV for their child.

CONCLUSION

In the study majority of the mothers had attended immunization class and had satisfactory knowledge. Most of the mothers were aware of the importance of polio vaccinations and had their child immunized up to age. Health workers were the main source of knowledge regarding immunization. In order to achieve 100% coverage, mothers should be informed of the role of both IPV and OPV in polio eradication. There is a need to arrange health education program sessions for mothers with main emphasis on importance of vaccination, its timing and the absolute contraindications of vaccination, so as to fill the gaps in their knowledge and practice.

ACKNOWLEDGEMENTS

I extend my sincere gratitude to the HOD, the whole staff and the interns of the Department of Communiy Medicine, ACME, Pariyaram.

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

REFERENCES

1. Poliomyelitis. WHO. World Health Organization; 2016. Available at: http://www.who.int/mediacentre/factsheets/fs114/en/. Accessed on 14 December 2016.
2. World Health Organization, Polio-free certification: WHO South-East Asia. SEARO. World Health Organization, South-East Asia Regional Office; 2016. Available at http://www.searo.who.int/entity/immunization/topics/polio/eradication/seapolio-free/en/. Accessed on 14 December 2016.
3. World Health Organization, UNICEF, CDC. Polio eradication and endgame strategic plan 2013-2018 executive summary. World Health Organization. Geneva; 2009. Available at http://www.who.int/immunization/diseases/poliomyelitis/endgame_objective2/about/en/. Accessed on 13th dec 2016
4. Maya C. IPV Introduction in Kerala to check wild polio virus. Available at http://www.thehindu.com/

news/cities/Thiruvananthapuram/ipv-introduced-in-state-to-check-wild-polio-viruses/article 8431493.ece. Accessed on 14 December 2016.
5. Park K. Park's textbook of preventive medicine. 23rd edition. Jabalpur: m/s Banarsidas Bhanot; 2015: 123,206.
6. Vaccines and preventable diseases. Polio Vaccination. Available at https://www.cdc.gov/vaccines/vpd/polio/index.html. Accessed on 16th December 2016
7. Sarada AK, Thilak SA, Sushrit A. Neloopant A cross sectional study on awareness about injectable polio vaccine among pregnant women and mothers of children under 14 weeks in a rural area of Kannur, North Kerala, India. Int J Community Med Public Health. 2016;3:2004-7.
8. Khan MU, Ahmad A, Aqeel T, Salman S, Ibrahim Q, Idrees J, Khan MU. Knowledge, attitudes and perceptions towards polio immunization among residents of two highly affected regions of Pakistan, BMC Public Health. 2015;15:1100.
9. Tagbo BN, Ughasoro MD, Esangbedo DO. Parental acceptance of inactivated polio vaccine in Southeast Nigeria: a qualitative cross-sectional interventional study. Vaccine. 2014;32(46):6157-62.

Cite this article as: Kaithery NN, Kumaran JA. Knowledge and practice of polio vaccination among mothers of infants attending community health centre of northern Kerala. Int J Community Med Public Health 2018;5:2911-5.