



A Study of the Attitude of Mothers of Under Five Children and the Field Staff working in a Rural area of Goa towards Pulse Polio Immunisation Programme

Community Medicine

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ABSTRACT

Background: The burden of poliomyelitis has reduced drastically and India is no longer counted in the list of polio endemic countries, this major milestone was achieved through strong Universal immunisation and Pulse Polio Immunisation (PPI) programme. However, attitudes of the community play an important role in the smooth implementation of the programme. There is a threat of importing wild polio virus from neighbouring countries like Afghanistan and Pakistan and hence we need to be more vigilant in understanding the shortcomings of the programme and tackle them at the earliest. Hence, the present study was carried out.

Methods: A cross sectional study was conducted for a period of three months at rural health and training centre in Goa. Mothers of under-five children attending OPD were randomly selected interviewed using a questionnaire. In depth interview was conducted in field staff workers involved in the implementation of PPI programme to assess their attitude towards the programme.

Results: Out of 100 mothers interviewed 86 % had heard about the disease poliomyelitis and 70% were aware about the symptoms of the disease. 76% knew that the disease is preventable but 37 % were under misconception that polio is curable disease. With regards to knowledge and awareness about polio vaccine, it was seen that 85% had heard about the vaccine and 40% were aware about its side effects. 65% were of the opinion that it is necessary to take the vaccine from both the PPI rounds and 66% said that it is necessary in addition to routine immunisation. Media was found to be primary source of information about PPI (44 %). The awareness level was significantly associated with the educational status and socioeconomic status (p value < 0.001).

Conclusions: The Study participants (mothers) were aware about Polio and PPI programme but 37 % have misconception that it is curable. Field staff workers are motivated but there are some issues regarding transport facility, lack of manpower. Anganwadi workers have stopped participating in mop-up but rest of the health staff is of the opinion that their participation is important.

KEYWORDS:

Assessment, Pulse Polio Immunisation, Mothers of under five, field staff

Background

Poliomyelitis is highly infectious disease mainly affecting children under five years of age. The virus spreads from person to person mainly through faeco-oral route or, less frequently by contaminated water or food and multiplies in the intestine, from where it can invade the Central Nervous System and cause paralysis. Most infected people (90%) have mild symptoms like fever, headache, vomiting, stiffness of neck, pain in the limb, in some cases it may invade the nervous system and cause irreversible paralysis¹.

Before Global Polio Eradication Initiative was launched in 1988, the wild polio virus was endemic in more than 125 countries, but currently the number of cases has reduced by 99% from estimated 3, 50,000 cases then, to 359 cases in 2014. According to Global polio surveillance data 2016; 72 cases of wild polio virus have been reported in 2015; 53 from Pakistan and 19 Afghanistan.^{1,2} Four of the six WHO regions have been certified polio free namely America (1994), Western pacific (2000), Europe (2002) and SEA (2014). 80% of the world's people now live in polio-free areas.¹⁻⁵

Pulse polio immunisation programme was started in 1995 with global initiative of eradicating polio in 1988 following world health resolution. The term 'pulse' describes simultaneous mass administration of oral polio vaccine (OPV) on a single day to all children below 5 years. Main aim of PPI is to interrupt transmission of wild polio virus by exposing the children to virus.⁶ Estimated 1, 50,000 polio cases were reported per year across the country. Until 2009, India accounted for more than half the world's polio incidence. India was removed from polio endemic countries by WHO in February 2012. Major milestone was achieved on 27th march 2014 when the South East Asia region of the World health organisation was declared

polio free. Last case of wild polio virus type I was in January 2011 in West Bengal, type 2 in October 1999 and type 3 in October 2010 in Jharkhand. According to global polio surveillance data from March 9, 2016, 5 wild poliovirus cases (WPV) were reported in Pakistan and 1 wild poliovirus case was reported in Afghanistan in 2016. In 2015, 74 cases of wild poliovirus were reported: 54 from Pakistan and 20 from Afghanistan⁴. While no polio cases have been detected in India for more than three years, poliovirus transmission is ongoing in the endemic countries – Afghanistan and Pakistan.¹⁻⁵ According to the Polio global eradication initiative weekly report, 3 WPV cases were reported by Afghanistan and 2 WPV cases were reported by Pakistan as on 12th April 2017.⁷

The cornerstone for polio eradication is interruption of polio virus which can be achieved through a combination of strong routine immunisation; pulse polio immunisation (PPI) sessions followed by mop-up rounds and intensified AFP surveillance. Even in post elimination phase there is a threat to import wild polio virus from neighbouring countries like Afghanistan, Pakistan.

Intense commitment of the stakeholder's right from the grass root level plays a crucial role in PPI programme. Poor participation, lack of support from community members are some of the factors which hampers smooth functioning of the programme and therefore it is important to know the attitude of the stakeholders towards the programme and factors responsible for motivation and those responsible for fatigue. Public acceptance of the programme stands very important. Misconception and myths regarding vaccine, concern about ill effects and lack of awareness about PPI is the major obstacle therefore it is important to study the awareness and knowledge of mothers towards polio and the programme.

Aims and Objectives

1. To assess the knowledge and the attitude of mothers of under-five children towards polio and PPI
2. To study the attitude of the field staff workers involved in implementation of PPI towards programme and study some of the factors responsible for motivation and those responsible for fatigue.

Materials and Methods

This cross sectional study was conducted in rural area of Goa catered by Rural Health and Training centre (RHTC), attached to Goa Medical College, Bambolim. Study was carried out for a period of three months. The ethical approval was obtained from the institutional ethical committee. A Sample of 100 Mothers attending OPD at RHTC were randomly selected after taking informed verbal consent and interviewed using predesigned pretested questionnaire to assess knowledge and attitude towards polio and PPI. Questionnaire consisted of two parts i.e. part A was meant for mothers of under-five children and Part B was for field staff workers. Part A comprised of 26 questions which focused on different aspect of the study mainly demographic profile of the study participants, knowledge and awareness about the polio disease and Polio vaccine, PPI programme. Participants were asked about signs and symptoms of poliomyelitis, whether it is preventable, susceptible age group, side effects of vaccine, source of PPI, reasons for non immunisation during PPI rounds, whether required in addition to routine immunisation etc.

We also conducted In depth interviews on Field staff workers which includes 3 Auxiliary Nurse Midwife (ANM), 2 Basic Health Worker (BHW), 1 Multipurpose Health Worker (MPHW), and 13 Anganwadi workers involved in implementation of PPI were interviewed in depth to assess their attitude towards PPI after obtaining informed verbal consent. They were asked about their years of service, experience and opinion about PPI and Mopping rounds etc.

Data was entered in Microsoft excel and analysed using statistical package for social sciences software packages (SPSS) software version 14. Descriptive analysis was used to express the results as frequencies and percentages, Chi-square was used for testing statistical significance and p value <0.05 was considered significant.

Results

Observations are presented in two parts i.e. in mothers of under five children and in field staff workers.

I) Observations in mothers of under five children

Out of 100 mothers interviewed at the study setting 36 % of them belonged to the age group 21-25 years and majority were Hindu (53%) and 30 % had attained secondary education (6 – 10th std) as shown in table 1.

Awareness about the disease and polio vaccine

In our study, 86 % of the participants had heard about the disease poliomyelitis and 70 % were aware about the symptoms. However, 76 % knew that the disease is preventable and 21% said they dint know whether it is preventable or not. It was learnt that 37 % were under the misconception that polio was curable and 23 % of the participants dint know whether it is curable or not. It was seen that 85 % had heard about polio vaccine and 40 % were aware about its side effects. In our study, 36 % of the participants had misconception that polio vaccine can prevent other diseases also as shown in table 2.

Knowledge about PPI programme

According to our study findings, 61 % of the study participants knew the target population for PPI Programme and number of PPI rounds held (figure 1). It was seen that 65 % study participants said that PPI is necessary from all rounds and 66 % said that it is required in addition to routine immunisation. Only 49% of the participants knew that polio drops could be given to children with mild illnesses. 71% were

aware that hot stuff should not be given for at least half an hour following vaccine administration and identical number of participants knew that breastfeeding doesn't interfere with the absorption of the vaccine. However, 19% opined that extra doses from PPI could be harmful to the child.

Media (television) was found to be primary source of information about PPI accounting for 44 % followed by health facility (20%), anganwadi (14%), church (5%) and others (5%).

When asked about reasons for attending the PPI rounds, 49% of the study participants stated that it prevents polio and 32% said they attend out of government compulsion as shown in figure 2. They were also asked to state some of the reasons as to why people do not bring their children for immunisation results are shown in the figure 3.

It was seen that awareness in the mothers of under five children was associated with the educational status and socioeconomic status and it was found to be statistically significant (P Value < 0.001) using chi-square.

It was found that 19% of the participants were aware about Injectable Polio vaccine (IPV) which is going to be introduced in routine schedule and the major source of information was television followed by health centre.

II. Observations in field staff workers

In depth interviews were conducted in field staff workers and anganwadi workers attached to study setting to assess their attitude towards PPI programme.

Out of 13 Anganwadi workers in the study area, 9 participate in PPI till date on the booth day whereas it was learnt that they had participated in mop-up rounds till the year 2013. According to the anganwadi workers, "It was workers union's decision not to participate in mop-up rounds because their some demands were not fulfilled". However if given a chance in future 10 (76.9%) of them are willing to participate. Whereas the health workers were of the opinion that "Anganwadi Bai" should help them in the mopping rounds. Three of them showed disinterest towards attending mop-up and opined that they should be paid extra for attending mop-up rounds.

Some of the statements by the field workers:

"PPI should not be continued because there is decline in the cases" (Anganwadi worker)

"It is essential to continue because there is risk of getting cases from the neighbouring countries" (BHW)

"Mop-up rounds are not required because each Anganwadi worker knows the number of children in the age group of 0-5 years and they motivate them to take polio on the booth day itself" (MPHW)

"It is a good initiative by government and very important to eradicate polio and I feel happy to participate in the programme" (Sanitary Inspector)

"PPI should continue because neighbouring countries are still having cases and India is at risk" (Anganwadi worker)

"Mop-up is very essential to find out missing cases and should continue" (ANM)

"Since we do not have cases in India at present, PPI should be conducted only in high risk area i.e. migrant population" (Anganwadi worker)

"Since IPV is going to be started PPI activities can be slowly stopped" (ANM)

“Anganwadi Bai should help us in mop-up as they know their area the best” (BHW)

“Extra manpower should be provided for mop-up activity which will make our work much easier” (Anganwadi worker)

“Proper transport should be provided for smooth functioning of the programme” (Anganwadi worker)

“Transport facility should be provided to mobilize children to the booth” (Anganwadi worker)

Discussion

Our study findings revealed that 86 % of the participants had heard about the disease poliomyelitis and 70 % were aware about the symptoms. However, 76 % knew that the disease is preventable. These findings were similar to a study findings by Singh et al 70.3 % were aware about the symptoms of the disease and 86.2 % knew that it is preventable by vaccination.⁸ In a similar study conducted by N Joseph et al all the participants had heard about poliomyelitis and 90 % knew that the disease is preventable.¹⁰ It was noted that only 56 % of the participants knew about the disease and 63 % said that it was preventable as reported by a study conducted by Misra et al in a rural area.¹⁰

In spite of good knowledge about the disease it was seen that 37 % were under the misconception that polio was curable. However, it was reported as 27.2% by N Joseph et al⁹ and 30.7% by Singh et al.⁸

With regards to the awareness about the polio vaccine, it was seen that 85 % had heard about polio vaccine and 40 % were aware about its side effects.

It was also observed that 36 % of the participants had misconception that polio vaccine can prevent other diseases as well. However, it was 24% in the study conducted by N Joseph et al.⁹

Regarding awareness about PPI programme in the study participants only 61 % were aware about the target population for PPI Programme. In Similar studies by N Joseph et al⁹ and Bhasin et al¹¹ it was 75 % which was more than our study. The differences in the awareness about PPI among the mothers in the present study as compared to N Joseph et al ,could be due to the fact that present study was carried out in rural area and N Joseph et al study was carried out in semi urban areas.

It was also noted that 66 % study participants correctly mentioned that it is supplementary to routine immunisation whereas almost half of the participants knew that mild illnesses is not a contraindication to administer the vaccine. Misconception like extra doses from PPI could be harmful to the child which was stated by few study participants, this might be one of the reason to decrease the coverage of the PPI programme. In a similar study conducted by Dobe et al only 2.2 to 6 % of the participants had the fear of side effect of the vaccine.¹² Television is found to be the major source of information about PPI which was comparable to other studies.⁹

The study participants stated that unawareness (45%) about the PPI programme was the major reason for non immunising their children by general populations, followed by fear about side effects(33%). In a study conducted by Manjunath et al it was seen that 25.2% said that reason for non immunisation is due to fear of harmful effects of the vaccine followed by ignorance (9.7%).¹⁴

Awareness in the mothers of under five children was associated with the educational status and socioeconomic status and it was found to be statistically significant which was comparable to other studies.^{9, 13}

Since this present study was conducted among Mothers, who were attending routine immunization OPD at the health Centre, this study only gives us findings of the knowledge and the attitude of mothers of

under-five children who are already motivated to get their children for vaccination. The mothers who do not get their children for routine immunization as missed in this study.

Conclusion

The findings of the study showed that the study participants were aware about Polio and PPI programme but 37 % have misconception that it is curable and polio vaccine can prevent other diseases. Also with respect to PPI programme some misconceptions were highlighted like extra dose of the vaccine from PPI rounds can cause harm to the child which can reduce the coverage of the programme. Educational and socioeconomic status were significantly associated with the awareness and knowledge towards polio and PPI (P value <0.001). Media mainly television was found to be the major source of PPI followed by health centre and anganwadi. Field staff workers are motivated but there are some issues regarding transport facility, lack of manpower. Anganwadi workers have stopped participating in mop-up but rest of the health staff is of the opinion that their participation is important. Health educations should be continued with main emphasis laid on the migrant population to remove any misconception about disease and the programme. Television is most popular source of information needs to be utilised to generate awareness about PPI. Field staff workers issues needs to be addressed because supposedly they are the most effective means to improve the success of the programme. Anganwadi workers should be encouraged to participate in mop-up and Incentives may be awarded for the participation. Field staff should have training on regular basis on latest updates about the programme.

Further study to involve the mothers who do not get their children for vaccination can be carried out to find in depth the reason for non-vaccination of their Children.

Table 1: Sociodemographic profile of the Mothers of under five children

| Demographic variables | No. Of participants (n = 100) |
|-----------------------------|-------------------------------|
| AGE (Years) | |
| 21-25 | 36 |
| 26-30 | 26 |
| 31-35 | 25 |
| 36-40 | 13 |
| 41-45 | 1 |
| RELIGION | |
| HINDU | 53 |
| CHRISTIAN | 27 |
| MUSLIM | 9 |
| OTHERS | 11 |
| SOCIOECONOMIC CLASS | |
| I | 19 |
| II | 22 |
| III | 28 |
| IV | 22 |
| V | 9 |
| EDUCATIONAL STATUS | |
| ILLITERATE | 21 |
| PRIMARY(1-5 std) | 16 |
| SECONDARY(6-10 std) | 30 |
| HIGHER SECONDARY(11-12 std) | 22 |
| GRADUATION AND ABOVE | 11 |

Table 2: Knowledge and awareness of the mothers of under five children towards polio and polio vaccine

| VARIABLES | No of participants (n = 100) |
|------------------------|------------------------------|
| | YES |
| Heard of polio | 86 |
| Aware of symptoms | 70 |
| Felt it is curable | 37 |
| Felt it is preventable | 76 |

| | |
|---------------------------|----|
| Heard about polio vaccine | 85 |
| Aware about side effect | 40 |

Table 3: Distribution of study participants based on knowledge towards PPI

| Variable | No. Of participants (n = 100) | | | |
|-----------------------------------------------------------------------|-------------------------------|----|-----------|-------|
| | YES | NO | DONT KNOW | TOTAL |
| Necessary from all rounds | 65 | 11 | 27 | 100 |
| Required in addition to routine immunisation | 66 | 11 | 23 | 100 |
| Breast feeding can be given after taking polio drops | 70 | 14 | 16 | 100 |
| Avoiding hot fluids atleast for half an hour after giving polio drops | 71 | 10 | 19 | 100 |
| Extra doses can cause harm | 19 | 61 | 20 | 100 |
| Polio drops can be given during mild illness | 49 | 24 | 27 | 100 |

Figure 1: Distribution of study participants based on their knowledge about Target population for PPI

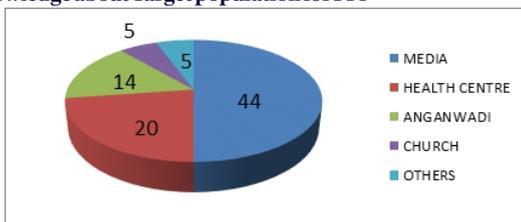


Figure 2: Distribution of study participants based on their reasons for attending PPI

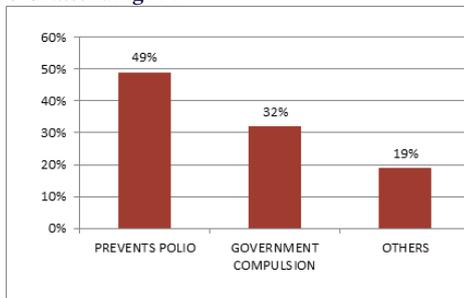
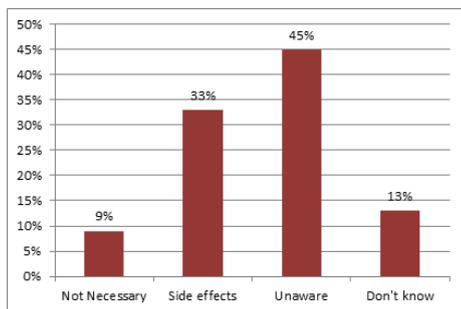


Figure 3: Probable reasons stated by participants towards non immunisation of children under PPI



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