

A Study of Factors Influencing the Health Seeking Behavior of Parents For Routine Immunization During the Covid 19 Pandemic.

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Abstract

The Covid-19 Pandemic has adversely affected the routine immunization services. The lockdown measures enforced by regulatory bodies to mitigate the transmission of the virus have further affected the rate of turn-over of children being brought for vaccination.

Aim: To assess the factors influencing the health seeking behavior of parents for routine immunization during the early phase of Covid-19 pandemic.

Methods: This was an observational questionnaire based study conducted after obtaining ethical approval. The questionnaire was shared via goggle forms with parents of children who visited this hospital and of the newborns who were born at this center during 15 Feb 2020 to 15 May 2020. The parents of children employed at the center and those who had technical difficulty for responding were excluded. Responses were tabulated and data analyzed. Chi square test was used to find any association between variables.

Results: A total of 81 respondents submitted the responses. 40.7% of children did not complete routine immunization. Amongst children below one year of age 42.86% did not complete full immunization. A significant association was observed between travel distances and transport difficulties that hindered the parents to visit the center for immunization. The other reasons for decline in turnover for immunization in 59.2% was fear of child getting Covid-19 infection due to a hospital visit and 67.9% had a suspicion that their child would be handled by same health care personal taking care of Covid-19. Educated fathers were more inclined to complete full immunization.

Conclusions: There was a decline in the rate of children being brought to facility for routine immunization. Redesigning strategies for safe immunization practices need to be strengthened.

Key words: Routine immunization, Covid-19 pandemic, transport difficulties

Introduction

The WHO declared COVID 19 as a Global Health Emergency in January 2020. It was declared a "Pandemic" on March 11, 2020. The Government of India declared a lockdown on March 22, 2020, which was initially for 21 days, ending on April 14, 2020. With the increase in cases of Covid-19 a second phase of lockdown was declared upto May 3, 2020 and a third lockdown extension upto 17 May 2020. The Ministry of Home Affairs had released guidelines for care of patients to be followed during the lockdown on April 15, 2020. Since March 22, 2020 effective services focused to primary, secondary and tertiary health care have been almost paralyzed. The primary focus of public health has been in preparedness and

containment of COVID 19 pandemic in the country. All other preventive health activities have been relegated to the background.

The outbreak of Covid-19 pandemic has greatly affected the essential and preventive health care services aimed for children. The state declared strict regulations of physical distancing and restricted mobility during the lock down phase to mitigate transmission of the virus. These measures have interfered with the important services like routine childhood immunization more especially so in containment and red zone areas. Dr. Kate O'Brien, Director of immunization, vaccines and biological programme at WHO on 1 May 2020 in UN news reported that if delivery of routine childhood immunization is back-slided then there would be outbreaks and resurgence of childhood common illnesses like measles and polio(1). There would be more childhood deaths that could be prevented by vaccines. With this in view, this study was planned to look into the factors affecting the behavior of parents to seek routine immunization of their child at the health-care facility.

Methodology:

This was an observational cross-sectional survey that was carried out amongst parents by circulating a self-designed validated questionnaire. The Institutional Ethics committee approval was obtained before the start of the study. Convenient sampling technique was followed for screening and enrolling participants in the study. The contact details of these parents were retrieved from the hospital database. The parents of children who had visited this tertiary care hospital for their child's illness or follow-up visit and parents of those newborns who had delivered at this hospital between 15 February to 15 May 2020 were identified. The parents were contacted telephonically and the detailed study information was provided to them. The questionnaire designed was circulated electronically using google forms and the consent for voluntary participation was affirmed when they willingly answered the questions and submitted the form. They were informed to respond to question on immunization status of the child as per the immunization card records. The parents who were not confident in taking the survey independently were asked to seek help from close family members to submit their responses. The parents of children employed at the institute, those who were unreachable on telephonic contact and those who did not have internet connection or had technical difficulties to answer were excluded.

Standard definition used:

Full routine immunization completed was a child who had received BCG, 3 doses of DPT/Pentavalent vaccine, OPV and one dose of Measles vaccine upto 1 year. (2)

Partial immunization as a child who had received at least one vaccine but had not completed the entire set of vaccines.

Statistical methods: This study was a qualitative research. The data was tabulated in an excel sheet. Qualitative variables were expressed in numbers and percentages. Chi-Square test was applied to establish association between select variables on online calculator. (3)

Results:

The google forms were circulated to 107 parents. Seventeen expressed their inability to participate because their phones were not compatible and did not have an internet connection, 5 were parents employed at the facility and 4 were not interested to participate.

A total of 81 respondents, majority being parents (n=77) and a few grand-parent(n=4) responded and submitted the form. The respondents were mothers in 61.7% of the cases. Most of the parents were less than thirty years of age. Majority were residing 5-10 kilometers away from the health care facility.

Table 1: Association of Variables for influencing health seeking behavior of Parents for immunization

Variables	Number of respondents n=81(100%)	No. of children vaccinated N=48 (59.2)	No. of children Non-vaccinated N=33 (40.7)	Chi-Square (P value)
Socioeconomic class				
Upper lower	50	30	20	0.88; P=0.82
Lower middle	20	12	08	
Upper middle	08	05	03	
Upper	03	01	02	
Age of child months				
<6	44	25	19	2.6; P=0.6
6-12	19	12	07	
12-18	05	03	02	
18-24	10	05	05	
>24	03	03	00	
Travel Distance (kms)				
< 5	21	14	07	8.7; P=0.03
5 - <10	27	19	08	
10-15	13	07	06	
>15	20	06	14	
Travel difficulties				
Yes	57(70.3)	23	34	21.19; P=0.00001
No	24(29.6)	23	01	
Migration to home town				
Yes	24 (29.6)	16	08	0.9; P=0.3
No	57 (70.3)	31	26	

No				
Are routine Vaccine services Yes provided at health facility in your No vicinity	39 (48.1) 42 (51.8)	25 22	14 20	1.14; P=0.28

The immunization as per the schedule provided in the immunization record was complete in 48 (59.26%) children and 33 (40.7%) children were not vaccinated. Amongst sixty-three children that were below one year of age, twenty- seven (42.86%) children had not completed routine immunization. Amongst children between 12-24 months(n=15), only 8 (53.33%) had taken measles vaccine and first booster dose.

Hindrances due to long travel distances and travel difficulties during the lockdown period like non availability of public /private transport, travel restrictions laid down by state and punishment by regulatory authorities were encountered by 57(70.3%) respondents and amongst these 34(41.9%) did not complete routine immunization. All those who had personal conveyance completed the routine immunization.

Social factors like reluctance from other family members (17.2%), stigmatization (14.8%) and fear of the child being attended by same health personnel also catering to care of Covid-19 patients by visiting the tertiary care hospital (67.9%) was perceived as a major deterrent for routine visits at these centers.

All of the respondents were aware and eager to vaccinate their child as per schedule and did not wish to delay the vaccine administration but 51.8 % were unaware of vaccine availability at health facility in the vicinity during the pandemic. The awareness about the ill effects of delayed vaccination and effectiveness of the vaccine during the pandemic were also not there in 67.9% in 75.3% parents respectively. 59.3% parents had a strong belief that their child would get Covid -19 infection if they visited the hospital.

Partial immunization status was reported by parents who had faced Unemployment and financial constraint due to lockdown in 46.43% of the children.

Discussion:

The start of the Covid-19 pandemic has affected the routine health care services and there has been a decline in the number of children being brought for routine immunization at the clinics(4). The lockdown measures declared by the state regulatory bodies have deterred the common man to visit health facility, unless required for a medical emergency. With the government restrictions on mobility and indecisiveness on the part of the parents, the routine immunization practices for children are remarkably hampered (5). The WHO in the guiding principles(March2020) had suggested to avoid mass immunization campaigns and to continue fixed site immunization where possible maintaining safe physical distancing. This could

affect the childhood mortality due to vaccine preventable diseases and resurgence of epidemic(6).

It was observed that there was a reluctance on the part of parents to seek routine immunization for their child during the early phase of the pandemic and strict lockdown. Paternal education status, travel distance from the health facility and transport difficulties had a statistically significant association with parents decision to complete routine immunisation as shown in Table 1. The other important reasons being fear and belief that their child would get Covid-19 infection or be attended by same health personal also caring for Covid-19 patients if they visited the hospital by 59.3% and 67.9% parents. A report by WHO also cited that parents were reluctant to leave home because of movement restrictions, fear of child getting Covid 19 infection, lack of information and indecisiveness on the part of parents that remarkably hampered children's immunization (7). The implications of the study by Abbas KM, Procter SR et al in Africa also suggested that more number of childhood_deaths could be prevented by sustained routine immunization than the risk of the child getting Covid-19 infection due to a hospital visit(8).

There was a remarkable decline in the rate of parents turn over for routine immunization at this facility during the study period when social distancing and lockdown measures were strictly levied by state though the birth dose vaccines were administered to all newborns at birth at the hospital. Dr. Saurabh Kumar Banerjee also reported that 250 children did not receive vaccines during the month of March 2020 due to varied reasons in a survey carried out in 30 villages in Rajasthan(9). Bramer CA, Kimmins LM, Swanson R, et al. reported in the MMWR weekly report of Michigan state that there was a decline in vaccination coverage in all age groups except the birth dose vaccines during the phase of stay at home orders by state(10, 11). A decline in take of MMR vaccine more than hexavalent vaccine during the phase of physical distancing and lockdown was also reported from many regions across Europe(12). Few of the respondents informed about completing their child's routine immunization, at center's closer to their home , away from this facility.

Parents lacked awareness and had doubts about vaccine availability in hospital or health facility in the vicinity during this period of the pandemic, effectiveness of the vaccine, ill effects of delayed vaccination. Social pressures and stigmatization from close family members created more confusion.

Migration of the population to their villages in a panic stricken state, prioritizing to meet basic needs over preventive health care and lack of awareness of center's providing immunization services in their home town during this phase for children had affected routine immunization in few cases. Unemployment and financial constraints were faced by 69.1% of parents affected immunization of 486.43% of children but few of these got their children immunized at a state heath care center. Supply chain disruption was not faced by 75.3% of parents as was reported in some reports from Africa. Reallocation of duties of health care personnel targeted to cater to care of patients with Covid-19, surveillance and contact tracing in community and at health facilities were also important reasons from the health care delivery system that limited delivery of these services.

There is a need to formulate new strategies for delivery of vaccines away from containment zones. WHO guidelines advocate delivery of services in a staggered manner, following physical distancing and safety precautions at mobile or school vaccination centers(13). The results of the study also suggest routine immunization services to be provided away from hospitals providing care for Covid-19 patients to allay parental anxiety. MOHFW and all bodies working for the welfare of children advocate strengthening the routine immunization services for children during this pandemic, during and after lockdown(14). As per the guidelines of Indian Academy of Pediatrics, ACVIP every opportunity should be tapped to immunize any child eligible for vaccination who is brought to a health care facility for any reason(15).

The limitation of the study was the small sample size and the respondents were patients visiting a single tertiary centre during the early phase of the pandemic. The responses were also as per the respondents best understanding.

Conflict of Interest: No conflict of interest among all the authors

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