

Improving Vaccine Accessibility After The Covid Pandemic

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ABSTRACT

Introduction:

The COVID pandemic disrupted routine healthcare services in many nations as the majority of the medical staff were diverted to pandemic management and nations enforced strict lockdowns to curb the movement of the people. Routine pediatric vaccination was one of the areas affected due to these measures. This study aims to attempt to identify those children with delays in routine vaccination and parental preferences regarding further catch-up vaccination.

Materials and methods:

Questionnaire-based cross-sectional study involving 75 children who came for routine immunization in the Department of Paediatrics, Saveetha Medical College from July – December 2021. Amongst these, the children whose vaccination was delayed were selected and a questionnaire was administered by interview method. The questionnaire included questions related to Socio-demographic details, Accessibility during the pandemic, User preference due to fear of the pandemic, Awareness about vaccination during the pandemic, and Solutions for improving vaccination in the pandemic situation.

Results:

The majority of the study population was males. The most common age group for whom vaccination was delayed belonged to < 6 months followed by 2 – 5 years. The most common reason attributed to delay in vaccination was fear of acquiring covid from the hospital (54%). Some parents felt apprehensive about the adverse effects following vaccination like fever (90%). With respect to awareness, parents wanted a reminder for vaccination (78%) with SMS alerts being the most preferred method of communication. The majority of the parents felt comfortable with dedicated private paediatric clinics followed by local vaccination camps as preferred centre for vaccination.

Conclusion:

In the setting of a pandemic, routine vaccinations should not be disrupted to avoid re – emergence of vaccine preventable diseases. This study stresses the need for setting up dedicated vaccination clinics and reminder to parents to ensure the routine vaccination if not missed in children.

Keywords: Vaccination, delay, COVID – 19

INTRODUCTION:

Vaccination has been one of the world's greatest pioneering breakthrough inventions in the field of medicine. The first vaccine was discovered by Edward Jenner in 1798 for which the basis began in 1796 when Jenner noticed that milkmaids who had gotten cowpox were protected from smallpox. This formed the basis for all

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vaccines and also ensured that small pox was the 1st disease in the world to be eradicated[1]. On May 8, 1980, the World Health Assembly announced that the world was free of smallpox and recommended that all countries cease vaccination: “The world and all its people have won freedom from smallpox, which was the most devastating disease sweeping in epidemic form through many countries since earliest times, leaving death, blindness and disfigurement in its wake”[2]. With time, newer vaccines have been introduced and have helped in controlling and eliminating certain diseases in some countries. The COVID – 19 pandemic began in December 2019, and was officially announced as a pandemic by the World Health Organisation on March 19th 2020[3]. To combat the spread of COVID – 19, many nations imposed strict nationwide lockdowns and curbs on movement of people. As a result, children and parents were confined to their homes for long periods of time, affecting routine healthcare services including regular vaccination programs.

Routine immunisation services faced stark challenges in 2020, with the COVID-19 pandemic causing the most widespread and largest global disruption in recent history[4]. Health services were substantially affected not only because of the lockdowns but also because of movement restrictions, also due to health facility capacity, as all health workers were being deployed to COVID-19 wards. According to a WHO report published in August, 2020, majority of the countries reported at least some disruptions[5] to essential health services, with routine immunisation services among the most frequently disrupted[6]. In India, a strict nation – wide lockdown was enforced on March 22nd, 2021; in addition to this routine patient services were suspended in most of the government and private sector hospitals. The 2nd phase of the pulse polio immunization in April 2020 was suspended due to the same reason.

The pandemic presented a particular threat for lower- and middle-income countries (LMIC) for battling the pandemic alongside pre-existing challenges, including efforts to control vaccine preventable diseases and the capacity of health systems to manage the additional burden of COVID-19. Though the risk of COVID-19-associated mortality for children has so far been low and trivial in both LMICs and High Income Countries[7], the children in LMICs are more likely to be disproportionately affected for several reasons[8] including disruption of routine vaccination, access to appropriate healthcare and access to proper food.

Continuation of routine immunisation activities is of paramount importance to prevent outbreaks of vaccine preventable diseases[9]. This study is an attempt to identify the concerns of parents who have had delay in the vaccination of their kids due to the COVID pandemic.

Methodology and research design:

Questionnaire based cross – sectional study involving children who are coming for routine immunization in the Department of Paediatrics, Saveetha Medical college from July – December 2021. Questionnaire is formed on the basis of various dimensions like:

- Socio-demographic details
- Accessibility during pandemic
- User preference due to fear of pandemic
- Awareness about vaccination during pandemic
- Solutions for improving vaccination in pandemic situation

Inclusion criteria:

Children visiting the Paediatric OPD at Saveetha Medical College Hospital for routine vaccination

Exclusion criteria:

- Babies less than 45 days of age
- Sample size, sampling technique and statistical analyses:
Sample size: Total number of children who received vaccination during the study period
July 2020-December 2020
- Sampling technique: The parent of the child will be given the questionnaire in the presence of the investigator (available in both English and Tamil Language). The responses were tabulated in an excel sheet and results were tabulated and analyzed using Chi square test and logistic regression analysis.

Results:

A total of 75 children were enrolled in the study out of which majority were males (58.1%). The most common age group for whom the vaccines were delayed belonged to 2-5 years (23%) followed by < 6 months (21%). Most of the parents enrolled in the study had educational qualification up to postgraduate level. Most common attributed cause for vaccine delay was fear of acquiring covid infection if visited the hospital (42%). Due to the delay in the vaccination most parents felt that the health of their child was at risk (55.9%). Despite the delay, most children (83%) did not have any major illnesses which necessitated hospital visit during the lockdown period. With respect to user preference in a pandemic situation, most parents felt apprehensive about visiting

a hospital during a pandemic (65.7%). Very few parents felt apprehension regarding vaccinating their child in general (15%), which was attributed mostly to fear of vaccine induced adverse effects like fever (90%) and based on misinformation on social media (10%). In the category of promoting vaccine awareness, most parents expressed the willingness to receive vaccination reminders (78.9%); with SMS being the most preferred option (66.1%). When offered options for improving vaccination compliance, most parents preferred a dedicated paediatric/ vaccination clinic for giving vaccination to their child (54%) followed by a medical college hospital (23%). 69% of the parents told they will feel comfortable with mobile vaccination clinic/ camps which provide vaccination at their doorsteps/ locality, which will avoid their visit to the hospital.

Discussion:

As per reports in New Delhi, India, parents were delaying vaccination for kids by avoiding hospital visits to prevent their exposure to coronavirus[10]. This puts children at risk for contracting other vaccine preventable diseases. In a study done by Leena R. Baghdadi et al[11] in Saudi Arabia, Common reasons for delaying vaccinations were COVID-19 infection and prevention of exposure to COVID-19 cases. This is similar to present study where most parents have given the reason for delay in vaccination as fear of acquiring COVID infection as the most common reason for delay in vaccination. In a study done by Van Brusselen et al[12], mentioned that stay-at-home orders, physical distancing, face masks and other non-pharmaceutical interventions (NPIs) impacted the dynamics of various other infectious diseases. They had counted 92.5% less bronchiolitis hospitalisations in Antwerp as compared to the last 3 years. Furthermore, there was a >99% reduction in the number of registered RSV cases in Belgium. This is also similar to the present study where during the pandemic, their children did not have any major illnesses for which they required hospital visit or admission. In a study done in Poland by Pisaniak P et al[13] about parents' opinions and knowledge about vaccination, majority have given vaccination to their children. A small percentage (17%) did not give their routine vaccinations to their children of which the main reason (76%) was fear of vaccine induced adverse effects like fever. This is comparable to present study in which the small percentage of parents who had general vaccine fear attributed it to that of adverse effects like fever. In contrast to the above study none of our parents were against vaccines in general, as in this study around 25% of respondents felt vaccines were unnecessary. In the category of promoting vaccine awareness, most of the parents felt comfortable in receiving SMS reminders regarding timely vaccination for their children. This is similar to few studies done amongst parents in different socio – economic backgrounds. In a study done by Ahmadian, L. Et al[14], amongst Iranian mothers of under 7 children about receiving vaccination reminders, around 94% of the participants wanted to be reminded about their children's vaccination schedule. Most of them (74.3%) preferred to receive reminders by short text messaging (SMS). In a study done by Mekonnen DA et al[15], in Ethiopian mothers' intention to use mobile text message reminders, 78.9% of mothers have intention to use text message reminders for vaccination, of which 75% wanted to receive the reminders a day before the vaccination due date. In the current era of increased mobile phone availability, access and usage, it is better to create a system to send vaccination reminders through text messaging to the primary caregivers to ensure children are vaccinated on time. In a study done by Amy G Feldman et al[16], about risk of resurgence of vaccine preventable infections due to covid – 19 related gaps in immunisation, they mention that partnerships between healthcare providers, community leaders, and local, state, regional, and national public health departments are needed to reassure families that vaccine delivery during COVID-19 is safe and to identify and catch up those children who are under immunized. They also mention a set of recommendations which include mobile vaccination camps, dedicated vaccination clinics at both hospital and community level to ensure complete vaccination. This is similar to our study where majority of parents have expressed that they feel better to vaccinate their children in dedicated paediatric clinics as they can avoid getting exposed to covid infection in addition to feeling comfortable with mobile vaccination camps within their community. This strategy has been employed by many nations including india for administering COVID vaccination as a part of mass immunisation campaigns.

Conclusion:

Routine vaccine disruption due to the covid – 19 pandemic leaves us with a risk of re – emergence of vaccine preventable diseases. Optimising vaccination strategies to ensure timely childhood vaccination, and creating of cohort of those children for whom vaccination has been missed needs to be created. Creating dedicated vaccination clinics, segregating vaccine clinics from regular OPDs, mobile vaccination camps, sending SMS reminders were some of the options which parents enrolled in our study had felt comfortable to avoid exposure to covid infection during their child's vaccination.

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Table 1 – Age distribution of the study population

Age	< 6 months	6 – 12 months	12 – 18 months	18 – 24 months	2 – 5 yrs
Total	16	9	18	7	17

Chart 1 – sex distribution of the study population

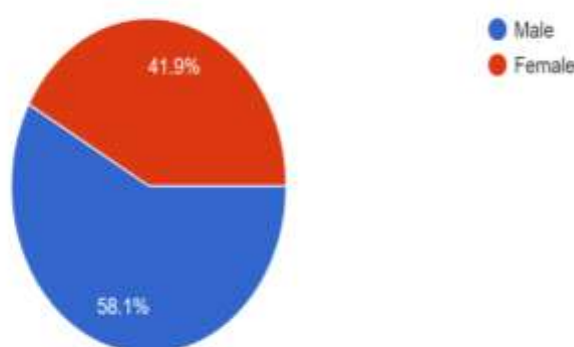
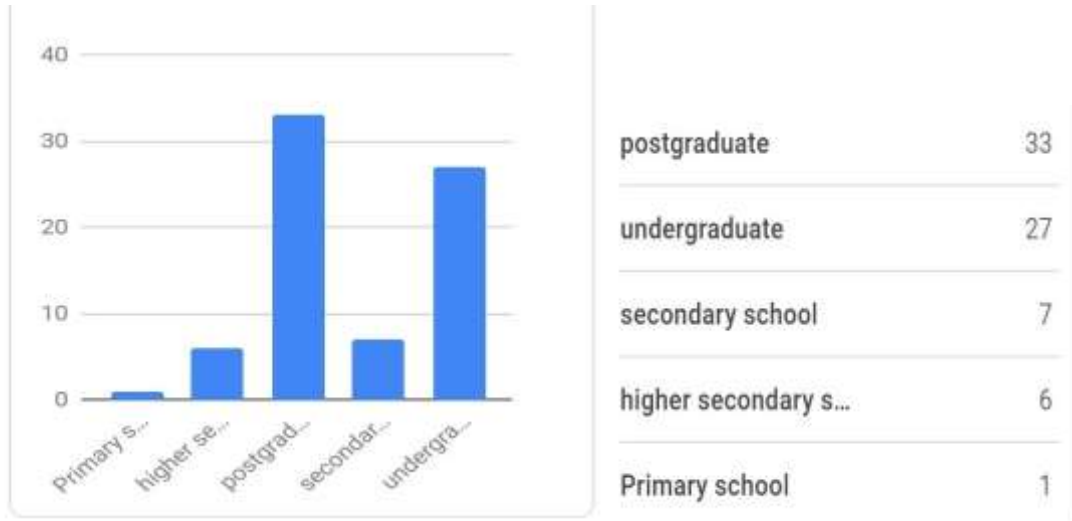
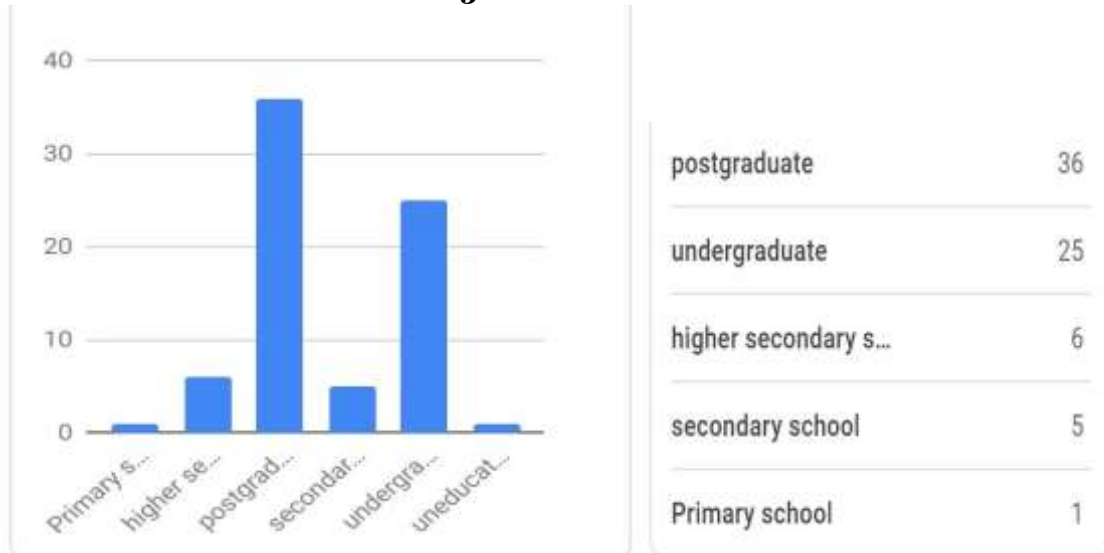
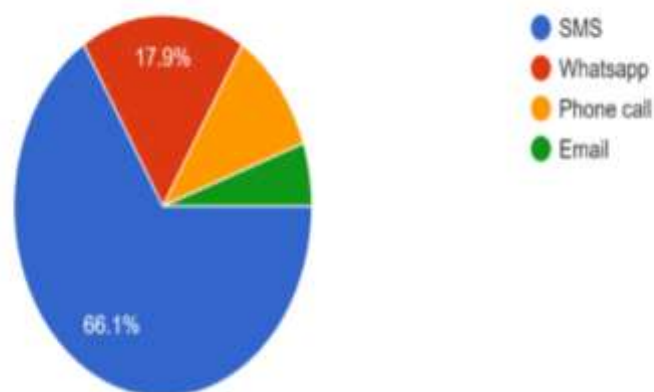
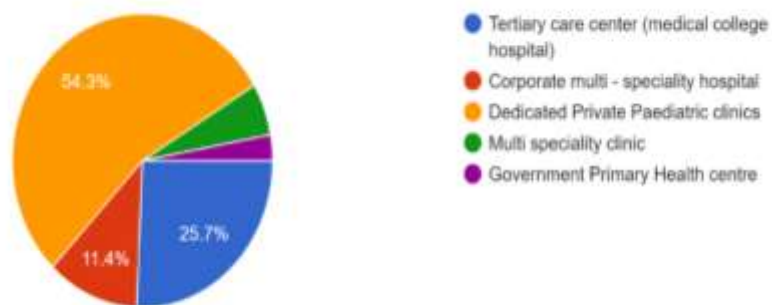


Table 2 – Fathers education**Table 3 – Mother's education**

Majority of the mothers were educated up to Postgraduate level

Figure 2 – Type of alert preferred for vaccine reminder

Most parents preferred SMS alert for vaccination reminders

Figure 3 – preferred location for future vaccinations

Most of the parents preferred dedicated private paediatric clinics to vaccinate their children in future