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Acronyms/ Abbreviations

CoWIN	Covid Vaccine Intelligence Network
eVIN	Electronic Vaccine Intelligence Network
API	Application Programming Interface
AEFI	Adverse Events Following Immunization
SARS	Severe Acute Respiratory Syndrome Coronavirus-2
PM-JAY	Pradhan Mantri Jan Arogya Yojna
VE	Vaccine Effectiveness
WHO	World Health Organisation
IIHMR	International Institute of Health Management Research
SII	Serum Institute of India
NIC	National Informatics Centre
UIP	Universal Immunisation Programme

Assess the efficacy of CoWIN app used for smooth administration of COVID 19 vaccination in India

Abstract

The COVID-19 pandemic created havoc worldwide since Jan 2021. India faced three waves during the last two years. Preventive measures to reduce the risk of infection include immunizations, staying home, wearing a mask in public, avoiding crowded places, isolating others, practice breathing hygiene, and avoid touching your eyes, nose, or mouth with unwashed hands. Vaccination being the only option to fight the pandemic, the Indian government launched and implemented various apps, digital interfaces, and dashboards with the technology support of NIC and limit its spread. On 16 January, 2021, India launched one of the world's largest COVID-19 Vaccine Intelligence Network (CoWIN) system, immunization campaigns, kicking off a massive endeavour to vaccinate around 1.3 billion people. The CoWIN API was launched by the Indian government offering assistance including locate vaccination centers, finalize appointments as per availability, manage the vaccination plan, generate certificates for downloading and reporting of adverse events after vaccination as per AEFI (Adverse Events Following Immunization) guidelines. India began its immunization campaign with two vaccines Covishield and Covaxin . The immunization locations were more than 10,000 private hospitals empanelled under PM-JAY and hospitals under the Central Government Health Scheme. Union Health Ministry developed this software, and ensured that this dedicated Co-WIN software is versatile and useful.

A quantitative analysis orchestrated in month of April 2022 in urban areas of New Delhi , rural areas of Kangra, Himachal Pradesh and a small representation of certain population across the country on a community based population. Sample size of

199 was taken using the method of convenient sampling. Data analysis was done using the IBM SPSS version 22 and MS Excel.

The research evaluated the experiences of randomly selected population of age 18 years and above to share their experiences willingly about the initial downloading of the app, use of the app for booking appointments, rescheduling appointments and finally downloading the vaccination certificates. All 199 had access to a mobile phone and had used the CoWIN app at least once for booking of vaccination. Most of the population did administer Covishield vaccine 83.9%, Covaxin was received by 15.6% and only one case of Sputnik vaccine was reported. Majority of the responders 64.8% approached the government hospitals and 33.2% of the responders went to the private hospitals for vaccination. Majority of the 70.9% respondents used the CoWIN app for booking vaccination appointments as per study. CoWIN app facilitated vaccination drive by generating reminders to take second dose. Initially the vaccination was administered at government hospitals only. To boost the pace of vaccination drive the government permitted paid vaccination in private hospitals from 01 May 21 onwards. 68.3 % of the respondents availed free vaccination at government hospitals. 18.1 % of the respondents availed both doses by paid vaccinations to avoid gatherings at vaccination centres and to avail vaccinations on the dates of their choice. 75.4 % respondents had smooth booking of slots. 99 % respondents were satisfied with the downloading of vaccination e- certificate available on the app. The government of India started walk in / without appointment facility at a later stage from 21 May 2021 to obviate the problems faced by population to use CoWIN app for booking appointments. 25.1 % respondents walked into vaccination centres for getting vaccinated. The use of CoWIN app was a revolution. Any invention / new technology takes time to be perfect. The portal was unresponsive at times, causing a bottleneck that slows down the drive. In order for technological innovation to be successfully expedited, slow internet

services and inadequate data storage infrastructure had to be resolved. Change is difficult to handle in general, but during the COVID-19 pandemic, it was easier to accept changes.

Introduction

Corona virus disease (COVID-19) is an ingenious disease caused by a virus, the severe acute respiratory syndrome Coronavirus 2. COVID-19 spreads in a population by air as a medium, with the droplets and small airborne particles containing the virus. The virus spreads faster in thick crowds who are not maintaining safety distances. Transmission is facilitated by splash or spray of contaminated fluids through eyes, nose or mouth. People are likely to be contagious for up to 20 days, and may be carriers of virus even if they do not develop symptoms. The COVID-19 pandemic created havoc worldwide, resulting in 474, 803, 177 cases and 6, 123, 368 fatal casualities as of March 23, 2022 (WHO dashboard). Preventive measures to reduce the risk of infection include immunizations, staying home, wearing a mask in public, avoiding crowded places, isolating others, ventilating indoors, controlling exposure time, washing hands with soap and water from time to time for at least 20 seconds, practice breathing hygiene, and avoid touching your eyes, nose, or mouth with unwashed hands. Vaccination being the only option to fight the pandemic, the majority of manufactured vaccinations were distributed to rich and developed countries, leaving poor and developing countries to struggle to vaccinate their populations. The Global Dashboard of WHO for COVID-19 Vaccine, as of March 22, 2022, highlighted that there was an inequity where high income nation like UAE had 97.73% population fully vaccinated as against Niger at 6.37% , Chad at 0.93% and India at 59.19%. Inequity in vaccine availability occured not only on a worldwide scale, but also inside each country, with many countries attempting to make vaccine distribution more egalitarian. The Indian government launched and implemented various apps, digital interfaces, and

dashboards with the technology support of NIC and limit its spread. India's healthcare workers have also organized huge immunization efforts that use the UIP to reach far-flung parts of the country .

CoWIN

On 16 January, 2021, India launched one of the world's largest COVID-19 Vaccine Intelligence Network (CoWIN) system, immunization campaigns, kicking off a massive endeavor to vaccinate around 1.3 billion people. This was a digital platform to enrol population nationwide for distribution of COVID vaccine. For the design, execution, assessing and monitoring, of COVID-19 vaccination across the country, CoWIN a cloud-based IT system that was an extension of the ongoing electronic Vaccine Intelligence Network (eVIN) was used. The CoWIN system would assist in tracking vaccine recipients and monitoring vaccination utilization, wastage, and coverage at the national, and sub-district levels. The system had a CoWIN web site for creation of users at state and district levels, maintenance of vaccinator databases, session sites, and beneficiaries . A dedicated CoWIN smartphone app was also available for individual beneficiary registration, authentication, and immunization recording. The immunization was implemented in stages, with priority given to Defence , health care personnel, frontline workers, and those who are at more risk. The eVIN includes a simple mobile app for tracking vaccine data and health worker updates, while the CoWIN beneficiary management platform keeps track of beneficiaries and manages vaccination sessions. All of this data is streamed into a cloud-based centralized server, from which crucial data may be viewed in near real-time using the CoWIN web interface's dashboard. The CoWIN online interface visualizes vaccine alerts such as low stock, expiration, and suggestions. It also shows the vaccination status of the recipient as well as other monitoring and coverage data. This platform has piqued the interest of a number of

countries. The CoWIN API was launched by the Indian government offering the following assistance:

(a) Locate vaccination centers,

(b) Finalize appointments as per availability,

(c) Manage the vaccination plan

(d) Generate certificates for downloading,

(e) Reporting of adverse events after vaccination as per AEFI (Adverse Events Following Immunization) guidelines.

These services were created with the goal of benefiting the general public. However, not everyone in the population will be able to gain equally. To combat the epidemic, a global vaccination initiative to safeguard individuals had begun. India began its immunization campaign with two vaccines:

- Covishield

- Covaxin

Vaccination in India

Bharat Biotech developed and manufactured the Covaxin, while Serum Institute of India (SII) manufactured the Covishield vaccine. The Covaxin, two consecutive doses when administered within a month, is said to have a 77.8% overall efficacy and a 93.4 percent efficacy against severe symptomatic illness. The Covaxin has also been shown to be effective against the Delta variant of SARS-CoV 2 (65.2 percent). The Covishield vaccine, which was likewise given in two doses, was said to have a 55.1 percent efficacy at a shorter time period (six weeks) between the two doses. In comparison to the short period between the two doses of the Covishield vaccine, it was stated that increasing the interval to 12 weeks or more conferred 147 percent better protection . The Covaxin doses are separated by four weeks, while the Covishield was changed

from four weeks at the commencement of the immunisation campaign to 12–16 weeks as of May 2021. The Covaxin doses are separated by four weeks, while the Covishield was changed from four weeks at the commencement of the immunisation campaign to 12–16 weeks in May 2021.

The immunization locations were more than 10,000 private hospitals empanelled under PM-JAY and hospitals under the Central Government Health Scheme. The Co-WIN application had been designed for implementation of the entire vaccination drive in India, as well as to follow the named beneficiaries in real-time. Union Health Ministry developed this software, and ensured that this dedicated Co-WIN software is versatile and useful.

Literature Review

The COVID-19 pandemic has claimed the lives of 5.5 million people globally, with India accounting for 8.7% of the total. The pandemic aggravated India's healthcare system's weaknesses. India was the second most impacted country, with 38.2 million recorded illnesses and 487 million deaths as of January 20, 2022. Vaccines, according to epidemiologists, are a critical tool in preventing pandemic spread. Study was conducted to examine the inequities in vaccine drive, assess effectiveness of vaccination policies and consistency of data sources. The immunisation campaign in India began on January 16, 2021, with government regulations in place to prioritise distinct communities. Several new rules were implemented during the vaccination drive to guarantee that vaccinations were widely available and that immunisation coverage was increased. Technology, statistics, and policymaking appeared to play a significant role during the pandemic, particularly in India. Sources of data on the number of cases, vaccine availability, digital applications under development, vaccine distribution, policy planning and execution at the health centre level was assessed. To investigate the

disparities, data on vaccination statistics was examined. It was discovered that certain states had vaccine distributions more skewed than others. Effectiveness of two important programmes that were implemented was studied, and how some of them failed to achieve equitable distribution in some states. In order to inform reliable policies and decisions, it is also critical that the vaccination data made public be authentic and accurate. In the volume analysis, it was revealed that the inequalities are important in policy management and the promotion of future policies based on equity and transparency. A Case Control study(3) was conducted in an Indian Eastern state to assess the Covid 19 vaccine effectiveness in preventing infection. The vaccine effectiveness (VE) was calculated to be 52.0% (95% confidence interval (CI) 39.0–63.0%) and 83.0% (95% CI 73.0–89.0%) respectively for preventing SARS CoV-2 infection. Vaccination lowered length of hospital stays and chances of severe disease infection.

Another study(4) will look into the impact of the Covid-19 outbreak in India on consumer adoption of digital health products. The study was conducted using a qualitative research method that included in-depth interviews and a literature review. The 15 digital healthcare users for the interview were chosen using a convenience sampling technique in January-February 2021. Data from the respondents' interview transcripts was used to conduct a qualitative content analysis. Another study will look into the impact of the Covid-19 outbreak in India on consumer adoption of digital health products. The study was conducted using a qualitative research method that included in-depth interviews and a literature review. The 15 digital healthcare users for the interview were chosen using a convenience sampling technique in January-February 2021.

Data from the respondents' interview transcripts was used to conduct a qualitative content analysis. Consumers overcome their fears about privacy and security to accept

digital healthcare solutions. The qualitative research design of the study gives light on Indian consumers' acceptance of digital healthcare.

A paper(7) published " Digital response framework for Covid 19 Pandemic monitoring control in India" highlighted the efforts of Indian government in favourably utilizing digital solutions and technological expertise of NIC to fight the COVID-19 pandemic. This article discusses a digital framework adopted for COVID-19 surveillance across the country, as well as other technical initiatives aimed at combating the global epidemic. It examines the various governing bodies' tasks, required supports, and technology solutions at various levels of governance. The research also includes an analysis of COVID-19 instances from various parts of India. The Government of India has created and implemented various apps, digital interfaces, and dashboards with the support of NIC as a technology partner to combat the pandemic and limit its spread.

A limited literature was available on CoWIN App since its recent launch by the government of India. However the literature available highlighted that the success to control the dreaded disease would had not been possible without a launch of a large and wide spread vaccination drive. To organise this worlds largest vaccination drive, monitor it and make it accessible to the common population was possible with Digital solution – CoWIN App.

Methodology

Research Questions

- How much did the population use the COWIN app during CoVID 19 vaccination drive?
- What were the problems faced by the users to use CoWIN App?

General Objective

What is the efficacy of CoWIN App?

Specific Objectives

As on date as per WHO dash board 72% Indian population is vaccinated with first vaccine dose, 60.6% population is vaccinated with second vaccine dose and 1.6% population is vaccinated with booster dose. The general objectives of this study would be

- Assess the efficacy of this CoWIN app.
- Use of CoWIN app by the population and its benefits.
- Survey the problems faced by the user population.

Data Collection

This study is a quantitative analysis orchestrated in month of April 2022 in urban areas of New Delhi , rural areas of Kangra, Himachal Pradesh and a small representation of certain population across the country on a community based population. Sample size of 199 was taken using the method of convenient sampling.

Financial Independency i.e. ability to pay for their own expenses has been used as inclusion criterion and the exclusion Criteria, if any person refused to participate in study was excluded. The tool of Data collection survey used here is a structured questionnaire including a mix of both open- ended and close- ended questions (the Performa of which is attached as Annexure).

Then data collection with informed consent was conducted during Apr 2022, corroborating the period of summer internship. Research ethics principle with regard to informed consent, confidentiality of data and individual's privacy were followed

Expected outcomes of this study is that the findings of this study would benefit all- the government, Health Ministry and the target population as it attempts to understand the efficacy of the app, the benefits and problems reaped during COVID 19 by the population. Data analysis was done using the IBM SPSS version 22 and MS Excel.

Results and Discussion

A questionnaire constituting 23 questions were circulated . A total of 199 responses were received and all responses were valid. The overall participation included 109 responses from males and 90 females of age more than 18 years . The responses were received from the population aged 18 years to 81 years, and all the respondents had been vaccinated with both the initial doses. The findings of this study have been divided into three sections corroborating the three objectives of this paper:

Section 1: Use of CoWIN app by the population and its benefits.

Section 2: Efficacy of this CoWIN app.

**Section 3:** Problems faced by the user population.

Section 1: Use of CoWIN app by the population and its benefits.

The research evaluated the experiences of randomly selected population of age 18 years and above to share their experiences willingly about the initial downloading of the app, use of the app for booking appointments, rescheduling appointments and finally downloading the vaccination certificates. All 199 responses received had administered both the initial doses. All 199 had access to a mobile phone and had used the CoWIN app at least once for booking of vaccination. Most of the population did administer Covishield vaccine 83.9%, Covaxin was received by 15.6% and only one case of Sputnik vaccine was reported. Majority of the responders 64.8% approached the government hospitals and 33.2% of the responders went to the private hospitals for vaccination. There was no difficulty experienced in downloading the app on the mobile phone and in logging-in to book the appointment for vaccination doses. Responses from various cities , rural and urban areas were received. Details are as under:-

Fig 1 : Distribution of Responses from various Cities/ Rural Areas
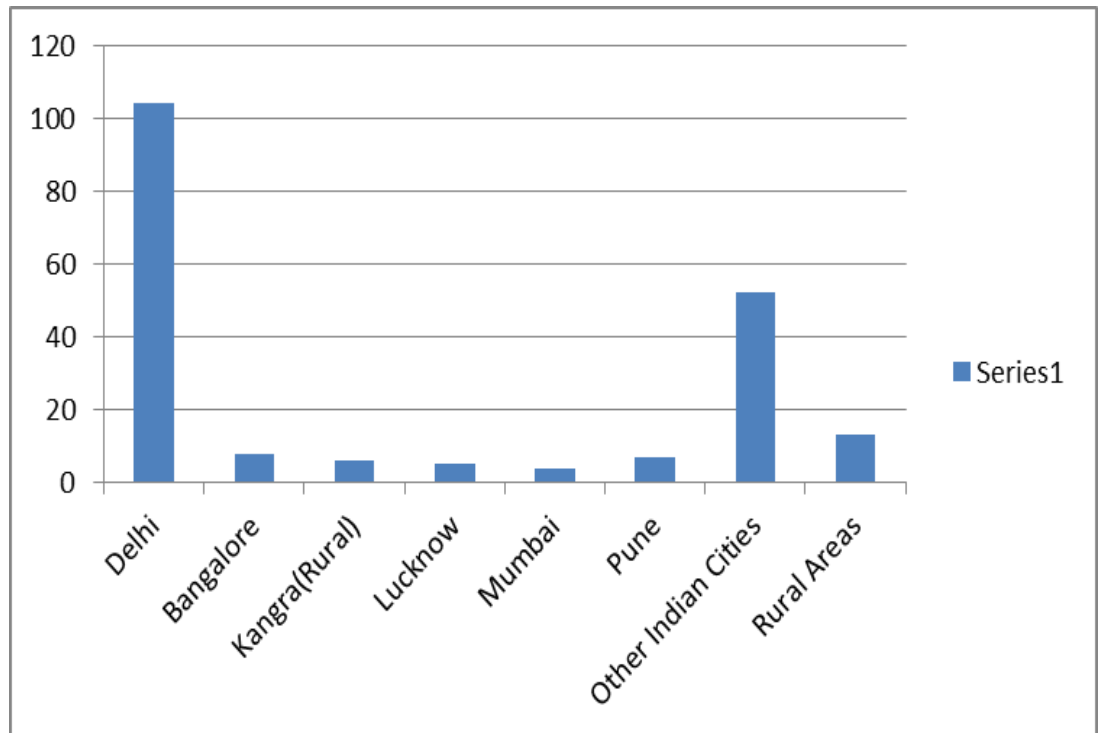
Certain results obtained to various questions pertaining to use of CoWIN app are as under:-

a) **Gender Distribution (199 Responses)**   **Fig 2**
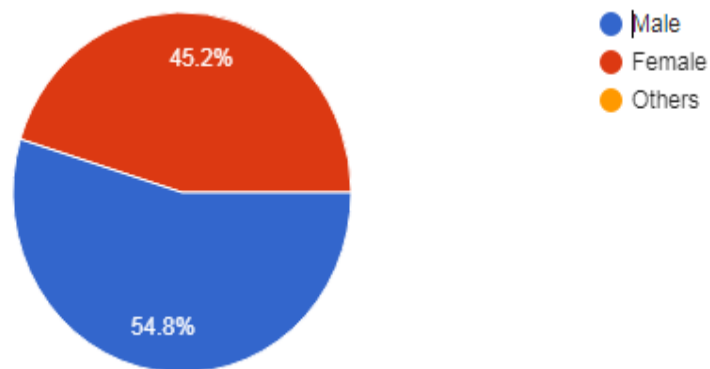
b) Percentage of people found vaccinated of both doses (199 Responses)   Fig 3
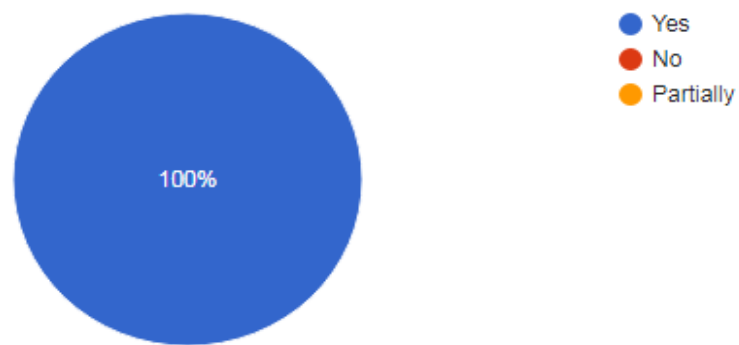
c) Type of vaccine administered   Fig 4
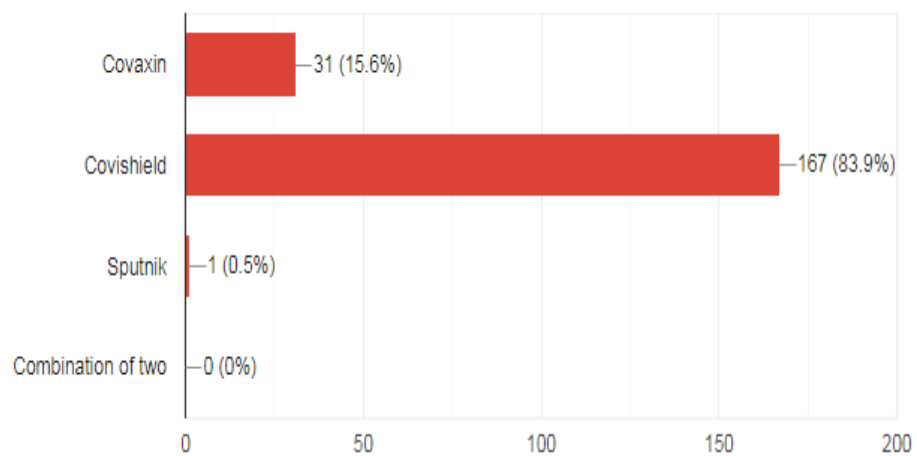
d) Type of hospital in which the vaccination was administered   Fig 5
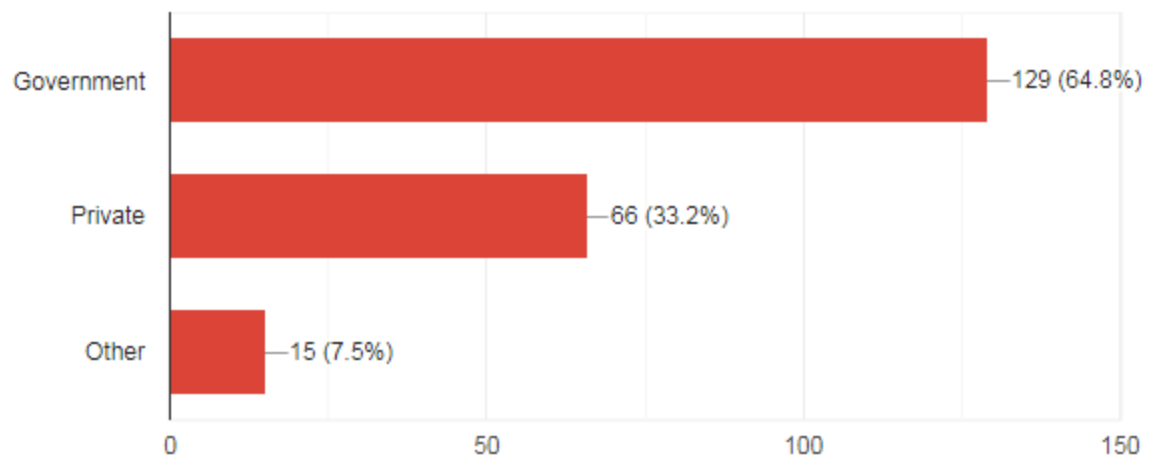
e) Did you register vaccination slot through CoWIN   **Fig 5A**
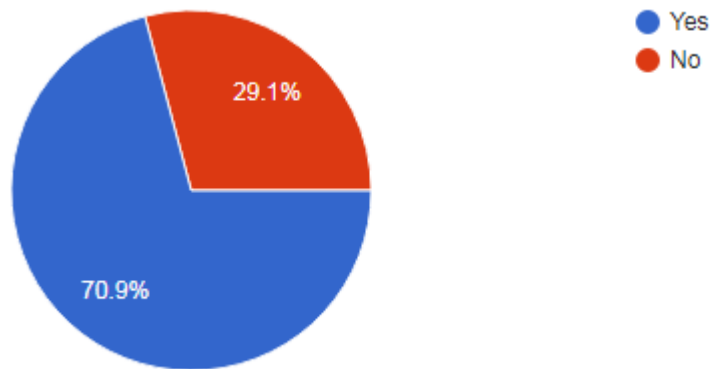
Implications of the results obtained are elucidated as under:

(i)   Majority of the population used CoWIN app for booking of vaccination slots. 70.9% respondents used the CoWIN app as per study.

(ii)   There was adequate awareness in public to take the desired doses on time.

(iii) CoWIN app facilitated vaccination drive by generating reminders to take second dose.

(iv)   Population was aware that same vaccine is to be administered as both doses.

(v)   Sputnik vaccine was of Russian origin which was imported at a later stage. It was available on payment therefore only 0.5% of the respondents had administered it.

(vi)   Integration of government and private hospitals was done for vaccination drive and availability of vaccines was reflected on CoWIN App.

(vii) Private hospitals provided vaccines on payment.

Section 2: Efficacy of this CoWIN app.

During the Covid Pandemic the Digital transformation was a great revolution in India. The population not only in Urban areas but also in Rural areas smoothly accepted the use of various Digital Platforms including the CoWIN app. This was a game

changer for the government as well as the population to make the conduct of world's largest vaccination drive a success. All the respondents of the survey conducted were already using Android mobile phones and were able to download the CoWIN app without facing any problems while logging in. Certain results obtained to various questions are as under:-
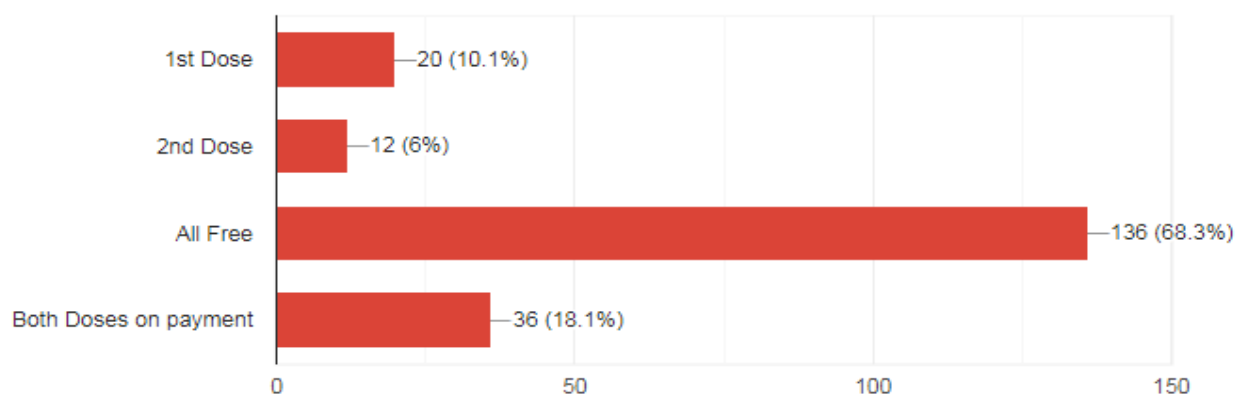
a) How easy was logging in to CoWIN app?   **Fig 6**
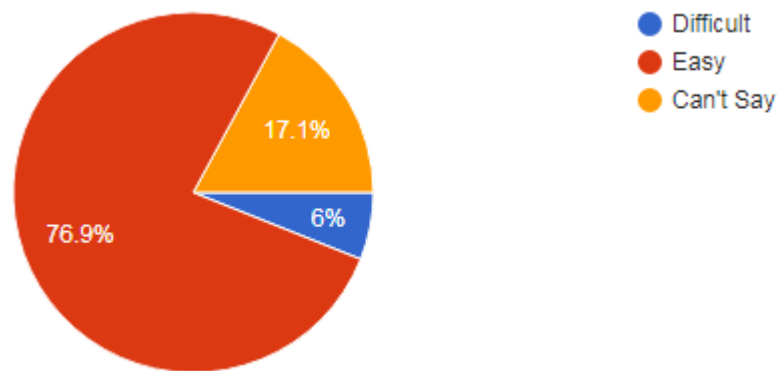
b) Free/ Paid vaccines administered/ booked through CoWIN App   **Fig 7**

c) **Percentage of users faced problems in registering in CoWIN App**   **Fig 8**

Yes
No

86.9%
13.1%
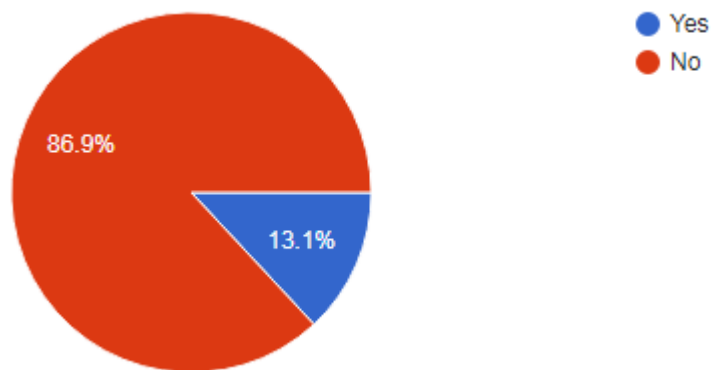
d) **Smooth booking of slots**   **Fig 9**

Yes
No

24.6%
75.4%
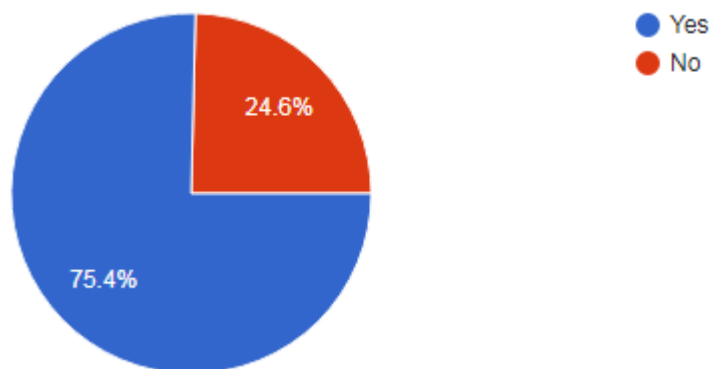
e) **Experience of the population to download the vaccination certificate from the CoWIN App**   **Fig 10**

Poor
Satisfactory
Good
Very Good
Excellent

27.6%
33.2%
10.1%
28.1%
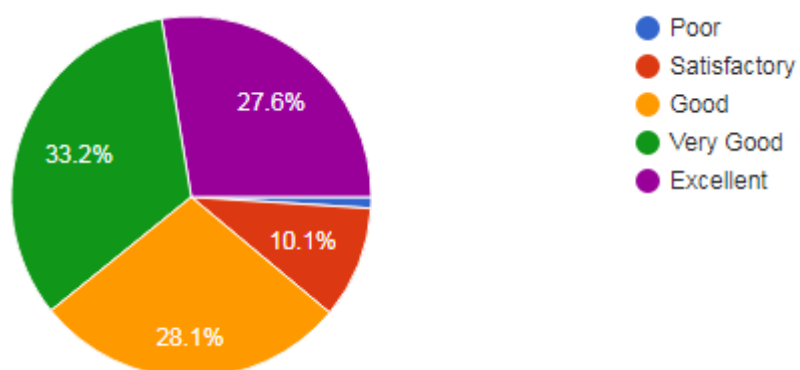
f) Overall satisfaction level of the population in use of CoWIN App   Fig 11
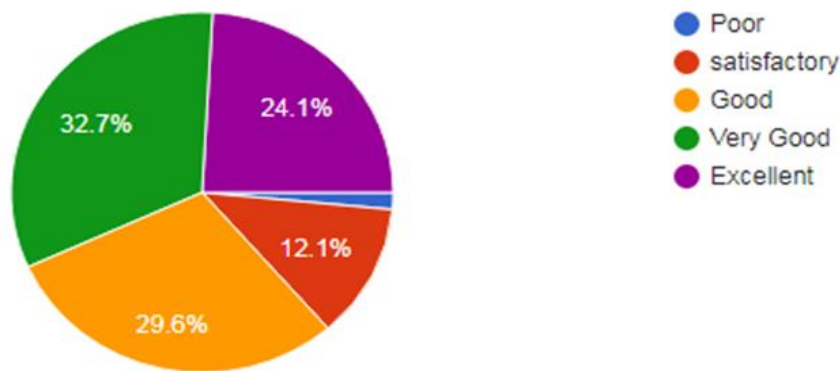
Implications of the results obtained are elucidated as under:

(i)   There were only 6% of respondents who had difficulty in logging into CoWIN app who were of above 70 years of age. They had to take assistance from others and book their vaccination slots.

(ii)   Initially the vaccination was launched on 16 January 2021 and was a free drive . Vaccination was administered at government hospitals only.

(iii)   To boost the pace of vaccination drive the government permitted paid vaccination in private hospitals from 01 May 21 onwards.

(iv)   68.3 % of the respondents availed free vaccination at government hospitals.

(v)   18.1 % of the respondents availed both doses by paid vaccinations to avoid gatherings at vaccination centres and to avail vaccinations on the dates of their choice.

(vi)   75.4 % respondents had smooth booking of slots.

(vii)   99 % respondents were satisfied with the downloading of vaccination e- certificate available on the app.

Section 3: Problems faced by the user population.

The satisfaction level of the population with respect to their experience of vaccination at the vaccination centres was not in the scope of study but was obtained to share their views to derive concrete suggestions.

Certain problems faced by the respondents of CoWIN app were:-

(a) Access to health centers was inequitable across the country.

(b) To access and use the CoWIN app one was required to obtain and enter an OTP (one-time-password) every 15 minutes .

(c) Access to the Internet was also an issue to certain population.

(d) Inadequate knowledge of use of internet by the rural masses and senior citizens was a disadvantage for getting due vaccines administered.

(e) CoWIN app was initially based on English language which was a hurdle for certain rural population.

(f) The App could be used to book slots in desired centres on first cum first basis. There was no policy /to book slots within a certain distance from his place of residence. People booked slots to centres where slots were available even though they were at distant locations .Therefore people had difficulties in obtaining booking slots in nearby centres.

(g) Congestion in booking site as soon as the site was open for booking was too a barrier.

Response to certain question to the respondents are as follows:-

a) Standard of hygiene and maintenance at vaccination centre   **Fig 12**
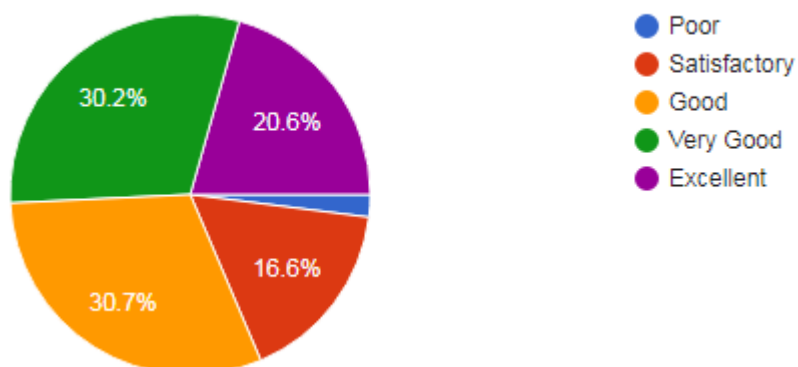
Legend:
- Poor
- Satisfactory
- Good
- Very Good
- Excellent

30.2% · 20.6% · 16.6% · 30.7%

b) Administration of conduct of vaccination drive at vaccination centre   **Fig 13**

Legend:
- Poor
- Satisfactory
- Good
- Very Good
- Excellent

30.2% · 19.1% · 15.1% · 35.2%
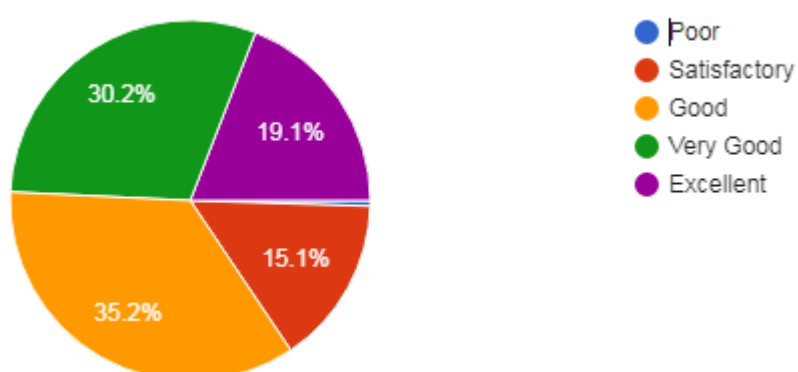
c) Behavior of Medical Staff   **Fig 14**

Legend:
- Poor
- Satisfactory
- Good
- Very Good
- Excellent

32.2% · 22.1% · 10.1% · 34.7%
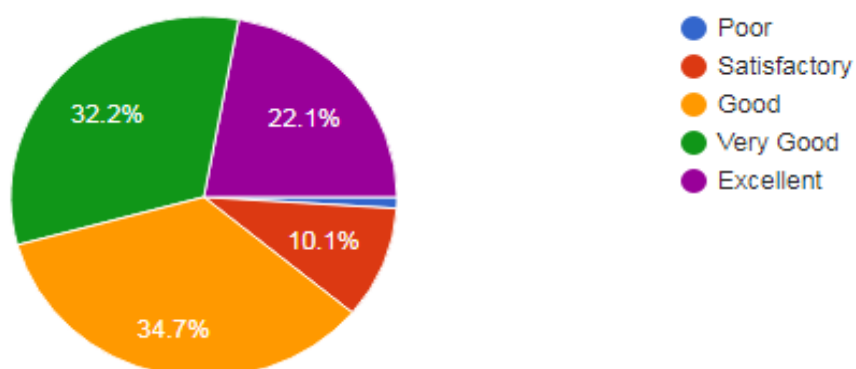
d)   **Waiting period at the vaccination Centre**   **Fig 15**
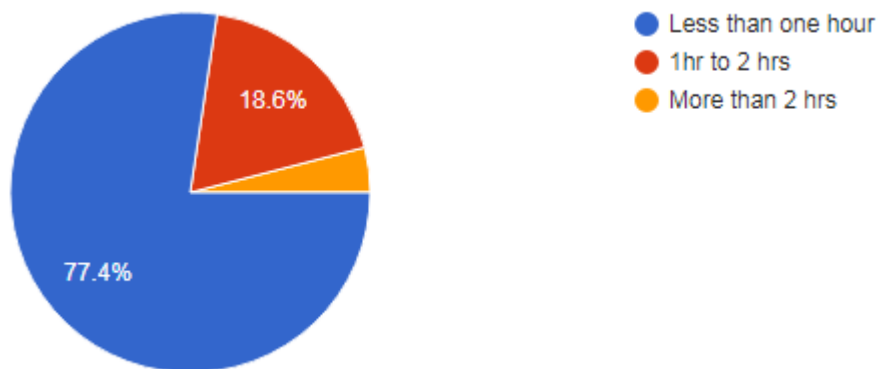
e)   **Availability of vaccination slots in nearest / Desired Vaccination Centre**

Fig 16
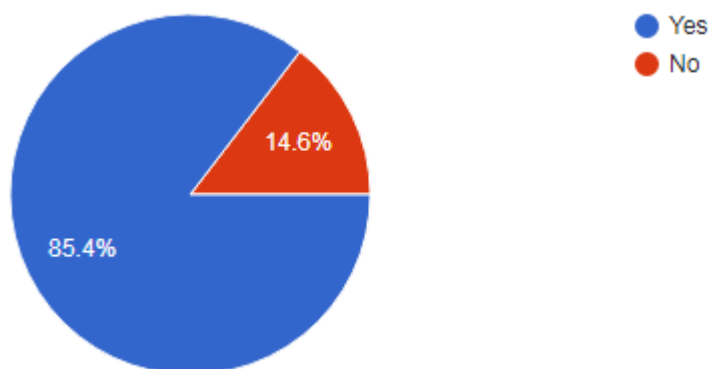
f)   **Vaccinations administered directly by Walk in/ without appointment at the vaccination centre**   **Fig 17**
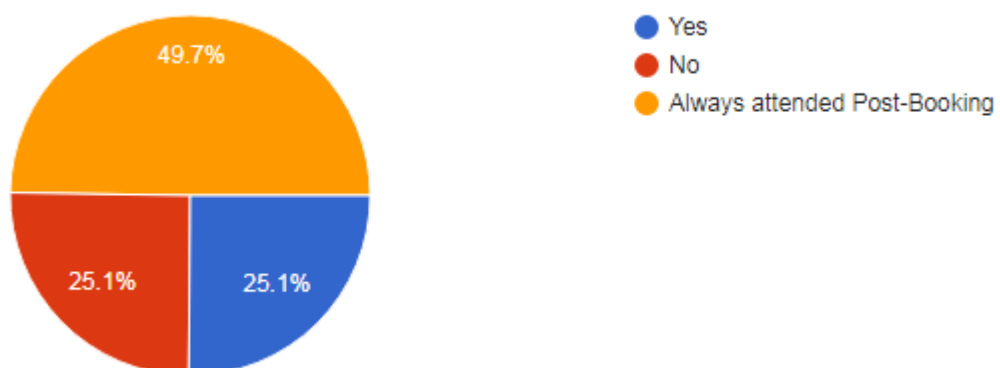
Implications of the results obtained are elucidated as under:

(i) Majority of the respondents 98.1 % were satisfied with the hygiene and sanitation of the vaccination centre.

(ii) Administration of vaccination, streamlining the procedure of safety and conduct were rated satisfactory by 99.4 % respondents.

(iii) 99.1 % Respondents were happy with the behaviour of the medical staff and vaccination centres.

(iv) Waiting period at the centres to administer vaccine by respondents were

Less than one hour	77.4 %
Waiting 1 to 2 hours	18.6 %
Waiting more than 2 hours	4 %

(v) 14.6 % of the respondents did not get slots for vaccination in nearby centres. They had to travel to distant places.

(vi) The government of India started walk in / without appointment facility at a later stage from 21 May 2021 to obviate the problems faced by population to use CoWIN app for booking appointments. 25.1 % respondents walked into vaccination centres for getting vaccinated. They were duly vaccinated.

Limitations

   (a) Respondents were known users of IIHMR and social circle.
   (b) There may be errors likely in self reporting of some information by some respondents.

Summary of the results obtained from the survey

S.No	Key Indicator	Result
1	Percentage of people found vaccinated of both doses (199 Responses)	**100%**
2	Percentage of people administered with Covishield dose	**83.9%**
3	Percentage of people administered with Covaxin dose	**15.6%**
4	Sputnik Vaccination	**0.5%**
5	Centres where Maximum Vaccination administered were affiliated to	**Government 64.8%**
6	Percentage of population used CoWIN app to schedule booking of vaccination doses	**70.9%**
7	Population Percentage to log in with ease	**76.9%**
8	OOPE by number of people to get vaccinated	**18.1%**
9	Percentage of people having problems to register with CoWIN	**86.9%**
10	Smooth booking of slots by population	**75.4%**
11	Percentage of people administered with Covishield dose	**83.9%**
12	Experience of the population to download the vaccination certificate from the CoWIN App	**77.6%**
13	Smooth downloading of CoWIN app	**27.6%**
14	Experience of the population to download the vaccination certificate from the CoWIN App	Excellent 27.6%
15	Satisfaction level of the population in use of CoWIN App	Excellent 24.1%
16	Standard of hygiene and maintenance at vaccination centre	Excellent 20.6%
17	People got vaccinated without booking and walked in	25.1%
18	Availability of slots in desired vaccination centre	85.4%
19	Behavior of medical staff	22.1% Excellent
20	Average waiting time	Less than an hour

Recommendations

     a.   App can be used to disseminate pandemic alerts or medical information.

     b.   Any glitches in smooth working of CoWIN app, it should be rectified on priority.

     c.   The health/vaccination details of all individuals on CoWIN should also have a back up with adequate security.

     d.   Internet access should be expanded to rural areas with better working speeds.

Conclusion

The use of CoWIN app was a revolution. Any invention / new technology takes time to be perfect. The portal was unresponsive at times, causing a bottleneck that slows down the drive. In order for technological innovation to be successfully expedited, slow internet services and inadequate data storage infrastructure had to be resolved. In addition, the website occasionally suffers cross-platform navigational difficulties. It is time consuming to use dedicated software on a smartphone, which is made more difficult in vaccination sites due to the lack of desktop computers or laptops. Beneficiaries have the option of self-registration. It would be preferable if the beneficiaries could choose their own time window. The CoWIN platform can also be used to disseminate vaccine-related education, communication, and information items. Change is difficult to handle in general, but during the COVID-19 pandemic, it was easier to accept changes, as evidenced by the health system during the abnormally high number of cases or the vaccine development process. A high level of preparedness must be maintained, and any issues with the Co-WIN app must be rectified immediately. There is a need for a co-operative system to register beneficiaries and to have an accounting system in a country like India, where technical problems and internet

disruptions, combined with levels of illiteracy and access to technology, create the need for a co-operative registration system and accountability system.

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Annexure

Consent Form

Dear Sir/ Madam,

Namaste .

I am studying at International Institute of Health Management (IIHMR) Delhi. You have been randomly selected to participate in the survey. A study is being conducted by IIHMR, Delhi with a title "Efficacy of CoWIN app for smooth administering of COVID 19 vaccination in India : A Qualitative study. " A brief questionnaire regarding your personnel experiences encountered while using CoWIN app for self and family members will assist us to highlight its efficacy and problems faced by the users .Answering the questions usually takes 5 to 10 minutes. The information you provide will be kept confidential and will not be disclosed to anyone. It will only be used for research purposes. Your personal information will be removed from the questionnaire, and a code will be used to connect your name and your answers without identifying you. Your participation in the survey is voluntary.

Do you agree ?

Questionnaire

1. Gender

   a) Male

   b) Female

   c) Others

2. Age (Only for more than 18 years)

3. Are you vaccinated

   a) Yes

   b) No

   c) Partially

4. Name of vaccine administered for vaccination

   a) Covaxin

   b) Covishield

   c) Sputnik

   d) Combination of two

5. State / UT at which vaccinated

6. City/ District/ Town in which vaccinated.

7. Did you register vaccination slot through CoWIN?

   a) Yes

   b) No

8. Type of Hospital where vaccinated Yes

   a) Government

   b) Private

   c) Other

9. Ease in logging in CoWIN?

   a) Difficult

   b) Easy

   c) Can't Say

10. Doses administered on payment through CoWIN?

    a) 1st Dose

    b) 2nd dose

    c) All free

    d) Both doses on payment

11A. Did you face problems in registering through CoWIN?

a) Yes

b) No

11B. If problems faced, mention in brief

12A. Was booking of slots done smoothly?

a) Yes

b) No

12B. If problems faced, mention in brief

13. Any notification received after booking of slot?

    a) Yes

    b) No

14. Standard of Maintenance of Hygiene at Vaccination Centre

    a) Excellent

    b) Very Good

    c) Good

    d) Satisfactory

    e) Poor

15. Administration of conduct of vaccination drive at Vaccination Centre

    a) Excellent

    b) Very Good

    c) Good

    d) Satisfactory

    e) Poor

16. Behavior of medical staff at Vaccination Centre

    a) Excellent

    b) Very Good

    c) Good

    d) Satisfactory

    e) Poor

17. If any problems faced at vaccination centre, mention in brief.

18. Waiting period at vaccination Centre.

    a) Less than 1 hour

    b) One to two hours

    c) More than 2 hours

19. Were you able to get slots in your nearest/ desired Vaccination centre?

    a) Yes

    b) No

20A. Did you reschedule your appointment?

20B. If problems faced in rescheduling appointment

21. Did you get vaccinated when you directly walked in / without booking in any vaccination centre?

    a) Yes

    b) No

    c) Always attended post Booking

22. Your experience in downloading the vaccination certificate from CoWIN app

    a) Excellent

    b) Very Good

    c) Good

    d) Satisfactory

    e) Poor

23.Rate your experience /satisfaction of using CoWIN App.

     a) Excellent

     b) Very Good

     c) Good

     d) Satisfactory

     e) Poor