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MARKETING AND CHALLENGES FOR THE COVID 19 VACCINE IN UTTARAKHAND

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ABSTRACT

Background: The first case in Uttarakhand was recorded on March 15, 2020, and the total positivity rating was 17.5 on May 22, 2020. Given that Vaccination was the only "foolproof" way to fight against COVID-19, the inoculation of the population was necessary to revitalize the economy, protect its citizens and take a step closer to defeating the pandemic. Thus, Vaccine Drives were heavily incentivized and marketed to the general population.

Methods: In this research paper, the marketing, and challenges of vaccination in Uttarakhand have been analysed by collecting primary data through questionnaires and secondary data through research papers, articles, official government websites and newspapers

Findings: The Uttarakhand government employed various strategies to vaccinate the general public. They provided non-monetary incentives, appointed vaccine ambassadors, provided for workplace vaccinations and associated with private offices to run vaccine programs. These were met with certain barriers caused mainly due to the demographic factors such as nature of locality (rural/ urban), gender, etc. and vaccination shortage.

Conclusion: The programs of the Uttarakhand Government were met with mostly satisfactory responses. The problems causing barriers to vaccination have mostly straightforward answers which have to be implemented through long-term plans such as providing technical skills, better accessibility in rural regions and education to be scientifically aware among the general populace.

Keywords: COVID-19, Vaccination, Uttarakhand Government, Strategies, Problems, Initiatives, Barriers to Vaccination, Programs

1. INTRODUCTION

More than 900 million people have been vaccinated as of January 30, 2022, and more than 700 million have been fully immunised. This is the consequence of the world's highest COVID-19 vaccine programme, which began on January 16, 2021, with the administration of the vaccine to a sanitation worker at the All-India Institute of Medical Sciences (AIIMS), New Delhi, and has shown no sign of slowing down since. With a population of approximately 1.38 billion, India was able to vaccinate 50 percent of its population in a little more than a year following the launch of its immunisation campaign.

Vaccination reluctance and disinformation was by far the most difficult obstacle the Government of India encountered in facilitating and administering vaccines to its population, which included research and authorization, testing, procurement, logistics, verification, and certification. Due to a lack of knowledge, religious views, fear about the vaccination and its overall efficacy, and the resulting misconceptions, a significant section of the populace was unwilling to receive the vaccine. These difficulties were not exclusive to India but were prevalent worldwide. This sizable demographic that opposes vaccination could not be compelled to do so by the government, as doing so would not only diminish their electoral support but also violate their rights. In light of the fact that vaccination was the sole "foolproof" method of combating COVID-19, it was imperative to vaccinate the population in order to rebuild the economy, safeguard its residents, and move closer to conquering the epidemic. Vaccination Campaigns were therefore aggressively incentivized and promoted to the general populace. The manner in which India promoted its immunisation campaign contributed to the country's vaccination success.

2. OBJECTIVES

The aim of this research paper is to:

- Understand various strategies adopted by the Government of Uttarakhand to promote COVID vaccination in the state.
- To assess the barriers which hinder the implementation of the strategies and render it slightly ineffective, and the areas where they prevailed the most.
- To identify loopholes and suggest some opportunities for more effective execution of the strategies.

3. LITERATURE REVIEW

The worst strain of the virus known as "COVID-19" ravaged the human population in 2019. In November of 2019, the first infection was discovered in Wuhan, China. Since then, COVID-19 has spread rapidly over the world, with around 490 million positive cases. The World Health Organization (WHO) declared COVID-19 a pandemic on March 11, 2020, citing a 13-fold increase in COVID-19 cases outside of China. Novel coronavirus disease also infiltrated into India. India being a population of around 1.3 billion and a high population density country was under the immense risk of becoming an epicentre. To this the WHO said, “The future of the pandemic will depend on how India handles it.” It's one of the most contagious diseases humans have ever faced. The Indian government has taken essential and stringent measures to combat the deadly virus, including installing health checkpoints at national borders. The first case in Uttarakhand was recorded on March 15, 2020, and the total positivity rating was 17.5.

on May 22, 2020. In this research paper, the marketing, and challenges of vaccination in Uttarakhand have been analysed by collecting primary data through questionnaires and secondary data through research papers, articles, official government websites and newspapers. There has not been enough research done on this topic which made the need for our research paper even more.

One of the research papers on the similar topic is - “Assessment of COVID-Management: A Case Study of Pandemic Emergency in the Pithoragarh District of Uttarakhand” by Alias (2021).

Uttarakhand was one of the first states to create a state-level health policy in 2004, with specific goals, some of which have been met. Since its creation, the state has had a shortage of physicians and other healthcare-related resources, and it is working to fill the gaps. The state's health system, which was already in a precarious position, was caught completely off guard by the outbreak of novel coronavirus in Uttarakhand. The state, which had only one virology lab until March 2020, was able to put up four more in the first three months of the epidemic. In April, the health department was able to secure approval for the appointment of 201 doctors through the Medical Service Selection Board. In 2020, the state also introduced air ambulance and telemedicine services.

Vaccines are a vital tool in the COVID-19 fight. Covishield and Covaxin are two vaccines that have been given emergency use authorisation by the Central Drugs Standard Control Organization in India.

On January 16, 2021, India initiated a national vaccination programme against the SARS-CoV-2 virus. The Government of India has identified the priority groups who would be vaccinated first, based on the availability of vaccinations, because they are at higher risk.

On January 13, Uttarakhand received 1,13,000 doses of the Covishield vaccine, with 1640 doses going to health care professionals in central health units, 3450 doses going to armed forces medical services, and 107530 doses going to state government and private health care personnel. As a result, 112620 doses of vaccination were distributed. When it comes to community awareness, all front-line employees were enthusiastic about vaccination. In the Pithoragarh district, a total of 25 session sites (vaccination centres) have been established. At the district headquarters, the Community and First Aid Centre, which includes the District Hospital and the Women's Hospital, has been designated as a session location. At each of the district's 25 session sites, 25 people were run through the vaccination process. The residents of Pithoragarh were anxiously anticipating the vaccine, and there was no anxiety among them.

This research paper was very relevant and useful. All the statistical data was clearly presented about the vaccination and the attitude and awareness about vaccination which gave a crystal-clear picture.

Another research paper closely coinciding with our topic is - “Rakesh Sharma et. al conducted "A comparative study of COVID-19 vaccination attitudes in the rural and urban population of Uttarakhand, India."

India’s universal immunisation program has steadily been growing and adapting to penetrate vaccinations at the community level. The researchers’ aim was to conduct for comparing and identifying the primary determinants of attitude towards Coronavirus Vaccination in rural and urban Uttarakhand. The authors conducted a comparative cross-sectional survey to assess attitudes towards COVID-19 vaccination.

In their analysis of the survey findings, it was found that there was a negligible difference in the mean score of the attitude towards vaccination in rural and urban areas. The people initially were apprehensive of the vaccine but gradually as its health benefits came to the fore, the perceptions started becoming positive.

Nearly one-third of the participants strongly agreed with the safety and efficacy of COVID vaccination, one-third of the participants agreed to encourage their loved ones to get vaccinated, and less than one-third of those surveyed were neutral regarding the vaccine's ability to prevent virus mutation. The majority of

respondents were unconcerned about the adverse effects of COVID vaccination on their prevalent diseases.

In rural areas, there was a significant positive correlation between the attitude towards the vaccine and the mortality rate among the participants' friends and family. In contrast, in urban regions it was observed that the participants' occupation and number of family members had a positive correlation with their vaccination attitude.

The research paper exhibited the need of an innovative and efficient marketing strategy to influence people with neutral attitudes and offset the negative perceptions. It was very relevant and gave us an insight on people's attitudes towards vaccination.

The last paper that was cited is "Knowledge, attitude, and practise regarding COVID-19, vaccination acceptability, and post-infection consequences across North India: A cross-sectional study" by Sudhanshu Bansal, Abhishek Kumar Gangwar, Sofia Thomas, Amit Sharma, and Sourabh Kosey Bansal et al. (2021).

The study covered 8 states in North India across which a cross-sectional survey took place. The objective was to determine COVID-19 awareness, attitude, practise, and post-infection effects among the general population in India following the conclusion of the first COVID-19 wave.

On the basis of the surveys, the KAP (Knowledge, Attitude, and Practices) was determined in the context of COVID-19. They found that vaccine acceptance was quite high among their participants and there was also a positive belief in vaccination.

Nearly half of the respondents were willing to receive the vaccine at a health clinic or centre. It was also demonstrated that individuals believed COVID-19 could be contained through vaccination.

4. DISCUSSION

This analysis of the past 1 year of the pandemic in the context of Uttarakhand showed that this state, though it experiences ecological, economical, and infrastructural fragility, has been quite successful in containing the spread of the Coronavirus.

The research produced further is an attempt to enlist and evaluate the added efforts of the state government, over and above the centre's directions to maximise vaccine coverage. This study is first of its type which condenses the marketing strategies adopted by the state government to promote vaccination campaigns, along with the barriers present thereon, in a single space. This helps the critics and policymakers to understand the credibility and level of readiness of the government in responding to such crisis. Such studies also build faith among people towards their government and reinforces the importance of the role of the state governments in a federal framework.

The underlying strategies discussed in the paper clearly suggest that the government has been quite pre-emptive and proactive in responding to the engulfing pandemic by means of vaccination. This is clearly justified by the fact that Uttarakhand was one of the first states to jab 100% of its population with at least one dose of vaccine.

The task of vaccination was a daunting one, faced with a multitude of barriers. The study presents these barriers under 5 heads. On critical analysis of the scenario, it was seen that these hurdles were more prevalent in the rural areas during the

initial stages of the pandemic. This observation is consistent with the findings of a study conducted by Rakesh Sharma, Prasuna Jelly, Vishwas AS, Lisa Chadha, Vartika Saxena, and Latika Mohan Sharma et al. (2021) titled "A comparative study of attitudes towards COVID-19 vaccination in the rural and urban population of Uttarakhand," which concluded that rural population had a more sceptical attitude towards vaccines during the early stages of the pandemic. Most of the studies conducted in context to vaccination either talks about India as a whole or only about metropolitan cities.

Through this paper, it was tried to understand the whole vaccination thing in the Himalayan state of Uttarakhand. This state is considered one of the most vulnerable in healthcare facilities. The distribution/availability is crippled. One of the studies already done on Uttarakhand was based on mathematical modelling of the COVID related data on number of infections, recoveries, and deaths, while covering the vaccination part very superficially. Another study by Salia Alias on "Assessment of COVID-Management: The study "A Case Study of Pandemic Emergency in the Pithoragarh district of Uttarakhand" was conducted, but it was limited to the Pithoragarh district. Lastly, there was a study by Sudhanshu Bansal, Abhishek Kumar Gangwar, Sofia Thomas, Amit Sharma, and Sourabh Kosey titled "Knowledge, attitude and practise about COVID-19, vaccination acceptability, and post-infection consequences across North India: a cross-sectional study" that covered 8 states, including Uttarakhand, but was too generalised because there are numerous cultural, sociological, and geographical differences between northern states and Uttarakhand. Our paper satisfies the requirement to present a comprehensive examination of Uttarakhand.

The information collected was related to all regions (rural, urban, semi-urban, and tribal) so as to accurately represent the entire picture of Uttarakhand. The data was collected from everyday analysis of regional newspapers, real-life events, web updates, and cross-sectional surveys. In a way, this paper gives deeper and grassroots level insights into the vaccination program and dilemmas; a thing which was found lacking in the existing literature. The majority of Uttarakhand being rural and geographically remote, it was difficult to obtain responses from such areas to come to a meaningful conclusion. This limitation was overcome to a significant limit by deeply studying the passively narrated scenario and vaccine environment about these areas reported in regional newspapers, blogs, and vlogs.

With the World Health Organisation saying that the pandemic is far from over, it becomes imperative for governments to prepare in advance for the impending waves of COVID by preparing future strategies and rectifying the past mistakes. The paper, though candidly, highlights some administrative, structural, and executive opportunities that must be considered to deal with similar pandemics and its waves in the future. There is scope for further research in this topic wherein the relationship between women education and literacy and their views on the necessity of vaccination can be studied.

5. METHODOLOGY

Primarily, this paper is descriptive in nature. Due to paucity of research work in a similar field, information was mostly extracted through rigorous analysis of newspapers, online reports/ articles, and government websites.

Apart from descriptive content, a mini- quantitative research model based on an online survey (via google form) was used. This method was used as it was easy to administer and efficient to gather data from a large audience.

1) Data collection tools & techniques

Data was collected from primary as well as secondary sources.

Primary data was collected via a questionnaire (google form), which was circulated among the residents of Uttarakhand. Elementary level of English was used to frame the questions. Efforts were made to penetrate this form to most of the regions (on geographical, economic, and demographic basis) across all age groups. A total of 257 responses were received. Due to poor internet connectivity and unavailability of smartphones, only a miniscule number of responses were received from tribal and hilly remote villages.

Individual newspapers were selected for secondary data in order to provide a meaningful evaluation of widely accessible content. Two newspapers (Garhwal Post and Dainik Uttarakhand) The Premier English Daily of Uttarakhand Garhwal Post for tomorrow 's People (2021-2022) were selected as they have maximum circulation in the state. Their regional publications were used to ensure geographical inclusivity. Newspapers from 16 January 2021 (starting of the vaccination drive) to February 2022 were studied. Focus was more on the months in which the Coronavirus peaked. All stories which talked about government interventions appear on a particular newspaper page number. Such pages were analysed thoroughly.

Apart from newspapers, data was also collected from online sources such as articles, social media posts, bulletins circular, and updates on departmental and ministerial websites of the Uttarakhand government, etc.

2) Data Analysis

Both quantitative and qualitative analysis of the data was done.

The quantitative data was analysed descriptively as well as inferentially. For descriptive analysis, the entire data was transported in an MS Excel sheet, and logical and mathematical functions were used therein to compute relevant percentage, ratios and mean. Inferential analysis was presented through correlation (to understand the association of different variable responses on questions of the Google form) and independent sample testing.

For qualitative analysis, the documented information collected from print and digital media were segregated and presented in a logical and coherent manner to fulfil the purpose of the research.

3) Ethical considerations

The research was conducted in accordance with all ethical standards. Participants were informed of the purpose of the study and reassured that their responses would be used exclusively for academic purposes. The confidentiality of respondents was maintained. Further, no participant was harmed or forced to fill the survey. It was made sure that their participation is voluntary and that the survey creates a climate of comfort.

The data from secondary sources was presented in an unbiased & passive narrative, so that it does not hurt the sentiments/ interests of any particular group of individuals.

6. FINDINGS

6.1. STRATEGIES ADOPTED BY THE UTTARAKHAND GOVERNMENT

- **Non-Monetary Benefits**

Vaccination Mela was organised by the district administration of Dehradun in conjunction with the State health department and Smart City Project Ltd. in an effort to encourage people to complete their second dose of COVID-19 vaccination. 79% of survey respondents were aware of such government initiatives, making it a successful initiative in terms of public awareness.

During the COVID-19 vaccination fair, residents who received the second dose were rewarded with raffles and games sponsored by the smart city. Smart city's "Mega Lucky Draw" prizes included an electric scooter, an LED television with a sound system, and an iPad.

In addition to consolation prizes such as smartphones, tablets, microwaves, kitchen appliances, tracksuits, etc., the winners received double-door refrigerators. 9.7% of the participants found these incentives intriguing (see Table 3 in Appendix)

The district administration of Udham Singh Nagar in collaboration with Dabur India Ltd. launched the "Vaccination on Wheels" program, a door-to-door vaccination campaign aiming for immunisation penetration and the vaccination of all adults in the region. During this program, inoculated individuals were given Chyawanprash sponsored by Dabur.

- **Targeting Educational Institutions**

Uttarakhand was one of the first states to target educational institutes to catalyse its vaccination efforts. The government was quick to vaccinate over 5,00,000 students enrolled in public colleges across the State within 3 months of the inception of the vaccination campaign. On-campus vaccine centres were set up and NCC and NSS students were asked to volunteer for the drive. Special drives were organised after the second wave of COVID-19 to ensure that all students, teaching and non-teaching staff were vaccinated before the school and college premises would open. Under the ambit of the State Department of Health, proper arrangements of beds and oxygen cylinders were made in the State Colleges for emergency treatments. The government also facilitated distribution of masks (meeting WHO standards) and arranged quarantine rooms for thousands of students coming in from abroad and other states in India.

For example, the Graphic Era Hill University vaccinated over 85% of its students, teachers, and administration staff before the commencement of regular classes. This was done by their Department of Medical Sciences (Graphic Era Hospital). Municipal Post Graduation College (Mussoorie), Indian Institute of Management (Kashipur), Indian Institute of Technology (Roorkee), were also among other colleges wherein the government associated itself to boost vaccination coverage among the students.

With the age group of 15-18 subsequently becoming eligible for the vaccination, the Department of School Education & the Department of Health immediately announced vaccine drives at government- aided schools. In Dehradun district, for example, over 200 government schools were chosen to organise vaccine camps. The Heads of the Schools were strictly asked by the government to ensure 100% vaccination of their students and teachers of at least a single dose. Vaccinated teaching staff were made to vouch for the vaccine by sharing their experiences to remove vaccine hesitancy.

The Tons Bridge School, Dehradun was among the pioneer schools to start special camps for students and teachers. A 2-day camp to vaccinate their students along with their parents was organised. As many as 200 students accompanied by their parents were inoculated with the first dose.

Of the student participants, 17.77% received their vaccination from their educational institutes (Refer Table-2 in Appendix).

- **Public Offices and Workforce Vaccination**

The State Government proactively engaged and coordinated with stakeholders across the spectrum, from Public-Private collaborative events to far-reaching government initiatives targeting the general public. All these activities were exercised by the State Department of Health, and at least 12 other departments were roped in for the smooth conduct of vaccination drives, who provided support in management of vaccination session sites.

In the Police, identification, and vaccination of beneficiaries from their own department was carried out. Vaccination was made compulsory for all the people working in the department and drives were organised at the district level (Police Lines) as well as the local level (Thanas, Kotwalis).

The Revenue Department organised various competitions such as wall painting (graffiti) among public offices to spread awareness about vaccination.

The Department of Sports and Youth provided NSS cadets for crowd management at session sites. Sports persons were motivated to get vaccinated through official notifications.

Workplace Vaccination was also carried out in other public offices. 64.28% of people working in Government Offices (in our survey) received vaccination at their workplace). In contrast, a meagre 14.28% of private sector employees were vaccinated at their workplace (Refer Table-2 in Appendix)

In private workplaces, Hero India Ltd. collaborated with the District Administration of Haridwar and administered 10000 doses of vaccination. The company also provided mobile vans for the vaccination of their employees as well as the general populace of the town. A similar drive was organised by Dabur in collaboration with the District Administration of Udham Singh Nagar as a part of their Corporate Social Responsibility contribution.

- **Vaccination Ambassadors**

In order to reduce hesitation about receiving vaccination, the State Government roped in Bollywood Actor Akshay Kumar to persuade people to get the vaccine by alleviating the apprehensions about immunisation. Akshay Kumar took part in a series of online conversations about vaccines alongside health care workers, teachers, and vaccine experts.

Local political leaders such as Chief Minister Pushkar Singh Dhami and his cabinet came forward to share their vaccination experience in order to motivate people to get vaccinated.

Appeals in the regional languages such as Garhwali and Kumaoni were made by famous celebrities belonging to Uttarakhand such as Raghav Juyal and Jubin Nautiyal.

This helped better localise the message and make the locals relate more to the message.

- **Medical reminders**

The government made efforts to remind the public to get vaccinated. Personal SMS were sent to eligible people for vaccination. They were also reminded of their 2nd dose. Road shows were organised in most localities to inform people about vaccination (benefits and nearest centres etc). Thank you notes to people for availing any government services alluded a clause urging people to get vaccinated.

- **Mass Mobilisation through social media**

Social Media platforms such as Twitter, Instagram and Facebook were used to increase reach. Daily status updates relating to the details of the vaccination program, Standard Operating Procedure (SOP), guidelines, instructions, and advisories. Social media was also used to debunk rumours and misinformation prevailing about vaccination. People were also informed of vaccine slots and nearby camps through a daily updated excel sheet which was shared on all social media handles.

Various helpline numbers and helpdesks were also made available.

- **Uttarakhand State Control Room**

This initiative was launched under the Integrated Disease Surveillance Program by the Directorate of Medical Health & Family Welfare, Government of Uttarakhand. A surveillance team of 5-6 members was formed for each district to watch over response for COVID-19 testing, conduct surveillance and ensure vaccination. Set up of COVID testing facilities, dedicated COVID health centres, COVID care centres were carried out in every district. More than 500 COVID care centres were set up across Uttarakhand, out of which 70% were set up in urban areas and the rest are non-uniformly present in rural and hilly areas.

Facilities such as free medical consultation, details of vaccination sites, self-registration for vaccination, daily bulletin, RT-PCR testing reports, etc. were made available under a single umbrella.

- **Uttarakhand Drone Force**

The Information Technology Development Agency's (ITDA) Drone Application and Research Centre (DARC) of Uttarakhand utilised drones to deliver vaccine doses to remote areas of the state. Although it remained limited in terms of usage, an integration of modern day technology to solve real-time problems although at a limited scale was a commendable effort by the government.

- **Recent Developments**

To vaccinate women carrying a child and as well as young mothers with infantile children (0-2 years), a special move was made, and they were connected to ASHA (Accredited Social Health Activities).

Details such as Contact and Area of more than 16000 ASHAs have been released to facilitate the process.

6.2. BARRIERS TO VACCINATION

- **Political Barriers**

As Paul Krugman says, “Everything is Political”. So, it was inevitable that politics would creep into the public discourse as soon as the vaccination program was launched.

There is a direct correlation between an individual's perception of the government's performance during the pandemic and their political affiliation as it relates to vaccination attitudes. (YouGov-Mint-CPR Millennial Survey) Those who had a favourable opinion of the governing party were more likely to take the vaccine immediately.

Thus, it was determined that supporters of the BJP were most likely to take the vaccine immediately. The Indian National Congress's supporters were also close behind. Those who did not support a political party were observed to be the most hesitant to take the vaccine immediately.

As a result of India's vaccine diplomacy, questions about domestic availability were also raised. These legitimate apprehensions came with two further questions: the financial resources for the acquisition of sufficient doses of the vaccines, and the capacity to distribute, store and administer them Gupta (2020).

There were political issues regarding the regulatory approval of vaccines, as well as confusion regarding the efficacy of vaccines. Critics viewed as amateurish, if not unprofessional and unethical, the government's hasty approval of vaccines in an attempt to gain political advantage. Concerns raised by the opposition about the credibility of India's regulatory regime, which were bolstered by the lack of transparency and absence of vaccine trial data, eroded public faith in vaccines. Political leaders made absurd claims regarding the efficacy of vaccines. One member of the opposition in Kumaon, Uttarakhand, asserted that the vaccine may cause impotence. Several leaders.

This politicisation of the vaccination narrative continued in the vaccination drives. The ruling Janata Party (BJP) promised free vaccines to all as their political manifesto to win public trust and faith to be used as a tool to win the upcoming elections. BJP leaders prominently featured in posters and billboards. Our honourable Prime Minister, Shri Narendra Modi features on the Vaccination Certificates. This created resentment among people and leaders of the opposition parties who argued that since public health is the responsibility of the state irrespective of the party in power, why was it exploited to boost BJP's public image?

These political narratives surrounding vaccination fuelled by TV debates and controversies and in terms of electoral announcements and hurried permissions, dented confidence of the people not only on the vaccines but also in the government.

- **Technological Barriers**

In the vision of a Digital India that utilises its technological resources to its optimum levels, the Indian Government supplemented its efforts of maximum vaccine coverage through the operation of CoWIN portal. The intention behind the portal was to facilitate easy scheduling and booking of doses and simultaneously eliminating the hassle of physical registration at the vaccination centres.

There were some issues with the functioning of the CoWIN Portal. For instance, it was reported in Kozhikode that some people received vaccination certificates which mentioned the same dates for the first and second dose. A person found his vaccination certificate on the portal when he logged in while he had not been vaccinated. The Hindu (2021)

Out of the participants who faced problems getting vaccinated, 21.66% of them were troubled by the CoWIN portal. The problem was almost evenly distributed between the Urban (48%) and the Rural/Tribal/Semi- rural (52%).

However, those were cases that happened few and far in between. The urgent problems caused by the provision of the CoWIN portal was that Generation 'X' (people born in the years 1965 - 1980) which were not tech-savvy in the majority of India, found it a herculean task to navigate the portal.

While the portals were convenient for the young and technology-friendly population, they were a nightmare to the old population. They had no affinity towards the internet and the tools to access it (mobiles, personal computers, etc.). Amongst the respondents who had problems while getting vaccinated, 27.78% reported it to be because the portal was not user-friendly. Similarly, the uneducated and underprivileged members of society also found themselves in the same boat in respect to lack of access to the internet and devices. Even when they did find access, help was required for filling up the form.

Some problems persisted even after registration was done. After communicating with many volunteers at Covid Centres across the state and studying newspaper reports, it was found that the population belonging to Generation X along with the educationally and socially backward people found it extremely difficult to track and retrieve the details of the 1st dose which was a procedural requirement of getting the 2nd dose. Eventually after enlisting help from fellow vaccine-seekers and volunteers who retrieved their data after digging through months-old texts and mails, they did get vaccinated. All in all it was a very cumbersome process. In the odd case where this information was not able to be retrieved, they would be denied vaccination, which went contrary to the convenience that the technology was seemingly offering.

After the 1st Corona wave, Walk-in Vaccination was also introduced.

- **Informational Barriers**

After the advent of the internet, there has been an informational overload.

Misinformation has prospered since that time, as people grow increasingly polarised, and it is difficult to distinguish authentic news from fake news. The prevalence of rumours and misinformation regarding vaccination along with an overload of government provided data (32 advisories, 67 guidelines) affected people across all age groups and sections of society.

Individuals found it difficult to properly understand the complex information such as the type of vaccine, changing recommended durations between doses, frequent issuing of government advisories and guidelines, etc. The Uttarakhand Government averaged 2 issues per week. Trustworthiness of the information came into question due to its frequently changing nature. On top of Government State Advisories, there were also multiple District and Zonal level advisories.

Fear of side-effects from the vaccine also contributed to vaccine hesitancy. It was reported that in a village in Almora, girls were not getting vaccinated due to a fear of menstrual cycle imbalance post-vaccination. In remote areas, people refused vaccination in the fear of their mortality. The incidents of blood clotting, deaths, and fever after vaccination further aggravated their concerns. The efficacy of the vaccine came into doubt. There was also a notion among young males that vaccination caused erectile dysfunction.

- **Attitudinal Barriers**

The negative value systems and perceptions that embedded itself in people's attitudes caused a serious hindrance to the vaccination process. Some of the misinformation was spread in the name of religious proclamations. In the Muslim community, vaccination was alleged to be a religious conspiracy against them. Hindus in semi-urban and rural areas who have firm beliefs upon their local deities also resisted vaccination because of their unscientific belief that the deities command them to not get inoculated. Such a phenomenon was observed in a remote village in the Ranikhet area of Uttarakhand where their "Lord" told them that the people of their village can never contract COVID-19. Similarly, a village opined that since they have been living in seclusion from generations and have fought any infections on the basis of their immunity. Hence, they would rely on that in the fight against the virus and not get vaccinated.

People who were acquainted with cases of extreme side effects of the vaccine also developed an aversion to vaccination. They spread negative word of mouth to their immediate family and friends about not getting vaccinated as well. Several frontline healthcare workers also demonstrated apathy towards the people who had come to get vaccinated and made it inconvenient for them at times.

36.79% of the participants did not want to get vaccinated because of vaccine hesitancy. This problem was more pronounced in females, with 68.50% of women more likely to have misconceptions than the men.

Particularly in the countryside, 8 out of 10 people who believed false information were women (Refer Table

Tribal regions in Uttarakhand have had their own way of life away from the civilised world. It is because of this culture that vaccine penetration in these areas were met with firm resistance. This resistance also often manifested itself as violence against the teams of healthcare workers who approached them for vaccination.

- **Structural Barriers**

The lack of managerial capabilities in the handling of the vaccination led to an array of structural problems that made it difficult even for the people who were perfectly willing and ready to get vaccinated.

The problem of vaccine shortage is the most pronounced of the problems faced by our respondents with 30.78% people facing this issue. Though it was partly due to the lack of supply and excess demand, structural issues such as Corruption and Black Marketing, Lackadaisical Inventory Management etc. further exacerbated the problem. Vaccines were allegedly made available to acquaintances of people in positions of power prior to them being given to the common man. Black Marketing was prevalent where the vaccines the Government was providing for free could be purchased at a cost. Improper Inventory Management also created problems such as there were some centres that were over- stocked while the rest were understocked.

Slots were allotted to people even when there were not any doses left to be given. The challenge of providing the vaccine to geographically remote areas was a task in itself. 1 in 10 people had difficulties in accessing vaccination, out of which they would belong to a non-urban region 90% of the time.

People who lacked access to internet and transport facilities, and those who had that but lacked the technical skill to search online for sites and slots also faced challenges. The proximity and way of conveyance also played a factor on the ease of vaccination. The hours of operation of the vaccination clinic affected people who were working inflexible hours.

Persons with Disabilities who were confined to their homes or a long-term care/ correctional facility could not travel to get vaccinated.

7. OPPORTUNITIES

Commendable arrangements were made for conducting the vaccination drives at the session sites including schools. However, few lacunas were observed. A register of the absentees for tracking them in the community session sites (ASHA) were not maintained by most of the schools. These shortcomings could have been overcome with proper micro planning.

Inadequate micro-planning contributed to the spread of COVID-19. In the midst of the pandemic, the mass vaccination campaign became a breeding ground for the highly contagious and evolving Coronavirus. These unfortunate occurrences acted as "super-spreading events."

Urgent inventory must be taken of locations where the vaccine is administered.

At vaccination centres, non-pharmacological interventions including physical separation, the use of appropriate masks (N-95 F in hospital and healthcare

settings), the availability of hand sanitizers, and temperature checks must be strictly enforced.

The problem of overbooking of slots in the CoWIN app and portal should be fixed at the latest. Overcrowding at vaccination centres can be regulated by limiting the number of slots and pausing the walk-in vaccinations.

As of May 13, 2021, about 56% of the total registrations to receive a vaccine were walk- ins.

Mass vaccination may not have been the most effective solution in this scenario, given the importance of administering vaccinations correctly. Improper vaccination administration can cause more harm than good. Less congregating of individuals leads to less contact, which reduces the spread of the virus. The optimal method for mass immunisation would have involved the systemic administration of vaccines and the strict enforcement of appropriate non-pharmacological guidelines.

8. MANAGERIAL AND SOCIAL IMPLICATIONS

The managerial implications of the paper are:

- Scope for better utilising Public- Private Partnership models.
- Adapt information to the demographic and avoid informational overload.
- Integration of technology should be done with proper planning and accessibility.
- In mass programs, micromanagement is crucial to avoid leakages in the supply chain. Stable standby supplies if maintained will permit providing vaccination as a convenient add-on to existing appointments.

The social implications of the paper are:

- In an increasingly technological world, basic operational skills should be developed across sections and age-groups.
- Responsibility regarding information lies at the individual level. There is a need to distinguish genuine news from fake and spread the word on the information that is completely verified and true.
- The subsequent learnings of the public regarding vaccination necessity should be one which is assimilated in their behaviour so as to handle future calamities better.

9. CONCLUSION

The paper on the marketing strategies adopted by the Uttarakhand Government helps conclude that the Government mainly delivered through on the vaccination program. A vast majority of the population were aware of government and government- backed vaccination drives. Vaccine hesitancy saw a declining trend all throughout the duration of the vaccination drives. The findings demonstrated that while the rural-urban gap was not very significant in most instances excluding vaccine availability and accessibility, the gender divide was unexpectedly impactful in causing misconceptions. The government stands to double down on efforts regarding rural connectivity, and educational equality for women. Politicization of Vaccination should be avoided at all costs. Strict measures to keep corruption in check by streamlining the supply chain and micro planning would have made the largely successful drive completely successful.

Verification of information and avoiding an overload were also points where the government can cover some ground. Our participants were generally satisfied with the efforts of the government for vaccination of the masses.

CONFLICT OF INTERESTS

None.

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None.

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