

# Impact of Covid-19 Pandemic and Vaccination in India: A Search

Mr. Suresh Kashinath Ghatge, Prof. (Dr.) Anuradha Parasar  
Liberal Arts, Sociology MIT WPU, MIT WPU, Liberal Arts, Paud Road, Kothrud, Pune,  
Maharashtra, India

DOI: <https://doi.org/10.47772/IJRISS.2023.7430>

Received: 10 March 2023; Revised: 31 March 2023; Accepted: 06 April 2023;  
Published: 30 April 2023

## ABSTRACT

The present study deals with identifying the impact of COVID-19 pandemic and vaccination in context of India. The impact of pandemic on the organization, management, and Health of people of India has been thoroughly described. Several strategies have been taken by management and Indian government in order to control the pandemic situation. The strategies and the importance of vaccination has been discussed in the study. Vaccination can be seen as an important part for mitigating health issue and control the risk of spreading the virus. This study focusing on discussing the vaccination process and how the vaccination helps the country to improve its condition and mitigate the pandemic risk. Quantitative research strategy has been employed in the study in order to collect data and achieve get an outcome of the research. Primary data has been collected from 51 participants and statistical analysis has been done on the collected data. According to the analysis of the data it can be stated that, Covid-19 pandemic reduces movement of the people that are forced to stop production of several organization. Moreover, vaccination method was more seen to be helpful for different management and organisation to mitigate issues and reboot financial activities.

## INTRODUCTION

The coronavirus infection started in Wahun, China, and after that, it spread all over the world. first Coronavirus is a highly infective and fast-spreading disease that impacts all over the world. The virus was rapidly spreading in the world and developing countries such as India have faced many challenges due to the virus. The virus creates high health crisis in India and India has faced several changes during the Covid-19 pandemic. The health risk is serious for elder people and for the people who are suffering from heart disease. The covid-19 pandemic not only affects people's health but also affects the business industries and countries' economies in India. The virus reduces the health strength of the people and also impacted children highly. The pandemic create a situation in the country where morality rapidly increased and the country also suffered hugely. Due to the pandemic, the government of India implement a lockdown in the country and maintain social distancing. Vaccination for preventing the coronavirus can help the country and also the world. The study discussed the coronavirus impact on India and how the vaccination process help India to recover from the situation.

### Research objective

- To identify the challenges faced in India during a pandemic to manage the situation
- To evaluate the strategies taken during the pandemic in India
- To understand the importance of vaccination to overcome health issues

### Impact of the Covid-19 pandemic on India

The covid-19 pandemic created a critical situation in India and bring many challenges to the country. The virus highly impacts human health and increases health risks. The pandemic brings lockdowns all over the

country. All the essential services are stopped due to the pandemic. People are staying at home for maintaining social distancing because the coronavirus is highly spreading (Changotra et al. 2021). The educational institution, hotels, restaurants, training institutions, cinemas, gyms, spas, and also sports centres are closed during the pandemic. India is one of the highest covid-19 affected rates in the world and the number of confirmed affected cases is over 2.5 million. The virus not only affects human health but also increases mortality in the country. Young people are less affected over than older people and children are also highly affected by this virus (Aju, 2020). The pandemic creates a huge crisis in the world and it including health and resource crises. During the pandemic the resource of the country was limited and many people are suffering from food, money and residential problems (Jyothi, 2021). The virus creates a situation where people are staying in their homes for a long time which is called isolation. Isolation creates mental health issues for the people in the country.

The virus not only affected human health is also affected the country's economy, agriculture, and business management and highly affected the business industries in India. All the sectors in the country are affected due to the pandemic which also affected the economic activity of the country. The covid-19 pandemic largely impacted the supply chain in India and also impact the manufacturing industry highly (Yung et al. 2020). Millions of enterprises faced threats during the pandemic time and the workforce of the country was also reduced and affected. Most of the organizations were forced to stop production due to maintaining covid-19 restrictions and at that time large numbers of people lost their job and which create a recession in the economy. The pandemic forced to stop the then industries to stop their manufacturing and this situation bring a huge loss in the organization and also financial crisis in the country. Most of the micro, small and medium enterprises and also large enterprises are affected during this pandemic. The management in the world which are related to the business industry are directly impacted and creates an issue for stopping the productivity of the industries (Yeshwanth, 2022). Most countries closed their transport due to the pandemic and it create a situation where industries stopped function and many people were losing their jobs.

### **Strategy for Covid-19 management in India**

The public health sector which is situated at the national, state, and district level collaboratively take actions to overcome this situation and mitigate the virus affection. India had imposed the rules and regulations in the country which were directed by the world health organization for mitigating the virus effect (Jessica, 2022). India focused on the strategies such as getting vaccinated as soon as possible, wearing masks properly when people are out of their homes, washing hands frequently, keeping a physical distance of at least 1 meter from others, and self-isolation (Madan, Bindal & Gupta, 2021). These strategies on healthcare help the country to stop the spreading of the coronavirus. At first, when the virus spread highly in India that time country implemented lockdown strategies to protect the virus from spreading. The covid-19 pandemic mitigation was necessary for the country because it distorts livelihood (Sharmin et al. 2021). The strategies taken by India help to reduce the mortality rate and improve the health care system in the country.

The government of India had taken multiple approaches such as proactive, pre-emptive, and also comprehensive strategies for minimizing the impact of the covid-19 pandemic. The government also focused on the healthcare infrastructure of the country and boost the healthcare process to decrease the issues. India launches the ***“world's largest vaccination program”*** for covering the country's population under the vaccination program (Dani et al. 2021). The government of India enhances the manufacturing of covid-19 vaccines in the country. During the pandemic time, the country launched the Aarogya Setu app for monitoring the covid-19 affective cases and also measuring the affection rate in the country. This app also helps people to find the healthcare center near them and also helps to find the covid virus testing lab. The country also ensures the availability of ventilators across the country. The government also financially helps the states by providing state disaster response funds. The nation ensures the testing of coronavirus, treatment, and the vaccination program for the people. During the time of the pandemic, the health organization suffered many risks, and it impacted the healthcare system in the country (Manish, 2022). The

ministry of health and family wealth fare provides technical support for managing the various aspect of mitigating the pandemic.

### **Importance of Covid-19 vaccination to overcome health risk**

At the time of the covid-19 pandemic, the continuous increase in the death rate in the country created a serious and challenging situation in the country. During this pandemic, the hospitalization rate of people rapidly increased. The coronavirus is high and fast spreading and as a result, the affected case and incidents create problems in the country. The virus largely infected children and old age people and get them hospitalized. The covid vaccine reduces morbidity and mortality and is also required for reducing the pandemic (Hupert et al.2022). There are some vaccines in the world that are adopted by several countries. The four vaccines are innovated in the world during the time of the pandemic. There are many benefits to vaccination. The vaccine reduces the risk of infection. The antibody which is in the vaccine helps to boost the immune system of the people and it also reduces the chances of coronavirus affection.

Vaccination is a simple, safe, and effective way to protect human from harmful diseases. Vaccination against the coronavirus can help people from becoming a serious illness. The coronavirus pandemic impacted every corner of life and covid-19 vaccination helped to out from the pandemic phase. People who have been vaccinated reduce a 95% risk of getting infected (reiter et al. 2020). The vaccine can help to save the life of people and reduce the health risk of children and old age people. The Indian government takes steep for the vaccination program of the old age people fast and after that, they provide vaccines to young age people. The coronavirus is more dangerous for its fast-spreading and highly affecting nature, and the coronavirus can help people to reduce the health risk and infection capacity of the virus. The coronavirus is not only beneficial for physical health but also beneficial for mental health. The vaccine reduces serious illness, death rate, and hospitalization.

The covid vaccine includes antibodies that are essential for boosting immunity and this vaccine is also helpful for children and old age people in improving their physical condition. The risk of getting covid-19 is much higher for the people who are not vaccinated than those people who are vaccinated. The corona vaccine prevents the infection rate and mitigates health risks (Eger et al. 2021). The most significant of the coronavirus effect is it enhances the health risk and also enhances the rate of mortality. The covid-19 vaccine is one of the most effective management strategies that helped to fight against coronavirus. During the pandemic, health organizations have faced risks to provide enough health services to the large number of patients. Lack of shortage in the covid vaccine was also shown in the nation during the pandemic time. However, the vaccine is essential for improving the covid situation and mitigating health risks.

## **METHODOLOGY**

### **Research design**

Research design is an important part of the methodology that is used for maintaining the effectiveness of the research and quality. It is a general plan that will help the researcher to find the research questions and it is also a framework for choosing the data collection method, and data analysis. Research design is divided into two groups such as Exploratory and Descriptive(Asenahabi, 2019). Exploratory research design aims to explore the specific data of the research area. On the other hand, a Descriptive research design is based on practical data and is useful for decision-making. In order to deal with the present study, *Descriptive research design* has been taken into consideration as this can be accommodating for shedding light on the current issues.

### **Research strategy**

The research strategy is also crucial for the research and helps to improve the significance of the research

material. There are two types of research methods used for research study and both are quantitative and qualitative (Vu, 2021). In this research study quantitative research strategy was used to describe the research data. Quantitative research describes, infers, and resolves the problem by using numbers. This research design includes a collection of numeric data, figure calculations, graphs, and charts.

### Data collection method

In the present study Primary data collection method has been given priority in order to collect data on the impact of the pandemic and the importance of vaccination in India. However, there can be two types of data collection methods: secondary and primary. The secondary data collection method deals with collecting data from several secondary sources and analyzing data that are already published in several reliable sources (Mazhar et al. 2021). On the other hand, primary data deals with fresh and first hand data that a researcher collected directly from the participants. In the present study, data has been collected from 51 participants through survey. 10 questions have been asked of the participants in order to get an insight into the study.

### Data analysis

In order to analyse the collected data, statistical analysis has been done. SPSS has been used for statistical data analysis and that is significant for research analysis. Statistical analysis of data is important for analysing a large amount of data and also helps to convert data into information. The present research study followed a few steps for analyzing data statistically. For this research statistical analysis such as correlation, regression and descriptive statistics are used.

## KEY RESULT

### Descriptive statistics

#### Frequency table

		Statistics									
		Age	Gender	Covid-19 pandemic impact negatively in India due to high health risk	During Covid-19, health organization faced risk to provide enough service to the large number of patient	Covid-19 enhance mortality rate in India due to rapid spread of virus	Covid-19 pandemic reduce movement of the people that force to stop production of the organization	In India, Covid-19 pandemic indicate huge financial loss due to lockdown	Covid-19 vaccine is one of the most effective management strategy that helped to fight against international coronavirus	Covid-19 vaccine has helped to decline health risk of the people	Covid-19 pandemic vaccination has helped to re-open the industries for production
N	Valid	51	51	51	51	51	51	51	51	51	51
	Missing	0	0	0	0	0	0	0	0	0	0
Mean		1.31	.67	3.25	3.39	2.59	2.67	3.41	2.75	3.49	3.02
Median		1.00	1.00	4.00	4.00	3.00	3.00	4.00	3.00	4.00	4.00
Mode		1	0	4	4	4	4	4	3	4	4
Std. Deviation		1.122	.712	1.055	.918	1.431	1.451	.983	1.278	.925	1.288
Minimum		0	0	0	0	0	0	0	0	0	0
Maximum		3	2	4	4	4	4	4	4	4	4
Sum		67	34	166	173	132	136	174	140	178	154

Figure 1: Frequency table

(Source: SPSS)

A frequency table is a statistical technique that helps to summarize a large set of data. This statistical table represents the mean, median, mode, sum, standard deviation, the minimum, and maximum values of the data set (Mahmoudi & Abbasalizadeh, 2019). As per the above-mentioned frequency table, the N value indicates 51 which indicates this study includes total 51 participants for this study. Moreover, the value of the standard deviation of this study above is 0.5 which indicates a high standard deviation.

### Correlation analysis

		Correlations							
		Covid -19 pandemic impact negatively in India due to high health risk	During Covid-19, health organization faced risk to provide enough service to the large number of patient	Covid-19 enhance mortality rate in India due to rapid spread of virus	Covid-19 pandemic reduce movement of the people that force to stop production of the organization	In India, Covid-19 pandemic indicate huge financial loss due to lockdown	Covid-19 vaccine is one of the most effective management strategy that helped to fight against international coronavirus	Covid-19 vaccine has helped to decline health risk of the people	Covid-19 pandemic vaccination has helped to re-open the industries for production
Pearson Correlation	Covid -19 pandemic Impact negatively in India due to high health risk	1.000	.947	.866	.866	.937	.865	.915	.908
	During Covid-19, health organization faced risk to provide enough service to the large number of patient	.947	1.000	.871	.865	.947	.854	.947	.889
	Covid-19 enhance mortality rate in India due to rapid spread of virus	.866	.871	1.000	.973	.848	.937	.821	.905
	Covid-19 pandemic reduce movement of the people that force to stop production of the organization	.866	.865	.973	1.000	.883	.945	.854	.923
	In India, Covid-19 pandemic indicate huge financial loss due to lockdown	.937	.947	.848	.883	1.000	.881	.961	.893
	Covid-19 vaccine is one of the most effective management strategy that helped to fight against international coronavirus	.865	.854	.937	.945	.881	1.000	.869	.938
	Covid-19 vaccine has helped to decline health risk of the people	.915	.947	.821	.854	.961	.869	1.000	.882
	Covid-19 pandemic vaccination has helped to re-open the industries for production	.908	.889	.905	.923	.893	.938	.882	1.000

Figure 2: Correlation analysis

(Source: SPSS)

Correlation is another statistical calculation technique that measures the strength of the relationship among the variables. In correlation analysis, a below 0.1 value indicates a perfect negative relationship among the variables. On the other hand, above 0.1 indicates a perfect positive relationship (Chen & Wang 2021). In this context, the above -mentioned correlation table indicates a positive relationship between the variables.

### Reliability analysis

Reliability Statistics	
Cronbach's Alpha	N of Items
.978	10

Figure 3: Reliability analysis

(Source: SPSS)

Reliability analysis statistical calculation indicates the reliability of individual components of the study. In this statistical analysis, Cronbach Alpha values above 0.7 indicate high reliability (Duan et al. 2022). Based on that, the above -mentioned reliability table indicates the value of Cronbach Alpha is 0.978 which refers to the high reliability of the study.

### Bar graph analysis

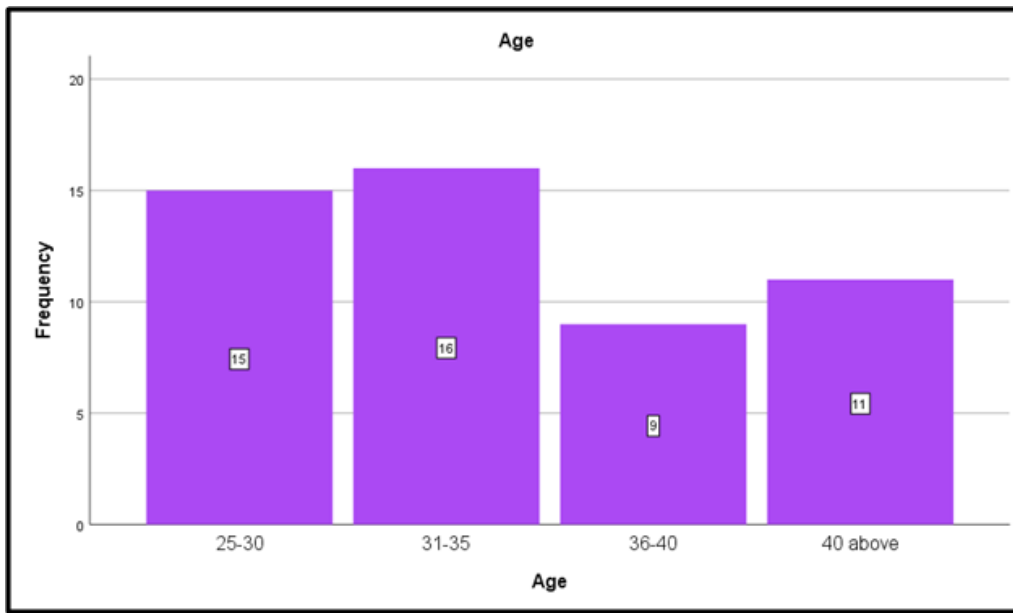


Figure 4: Age

(Source: SPSS)

Age is a demographic factor that helped to understand what age-group people are closely related to this research study. In this regard, this study included “25-30, 31-35, 36-40, and 40 above” age group people for this research. As per the demographic figure, the 31-35 age group people are closely related to this study.

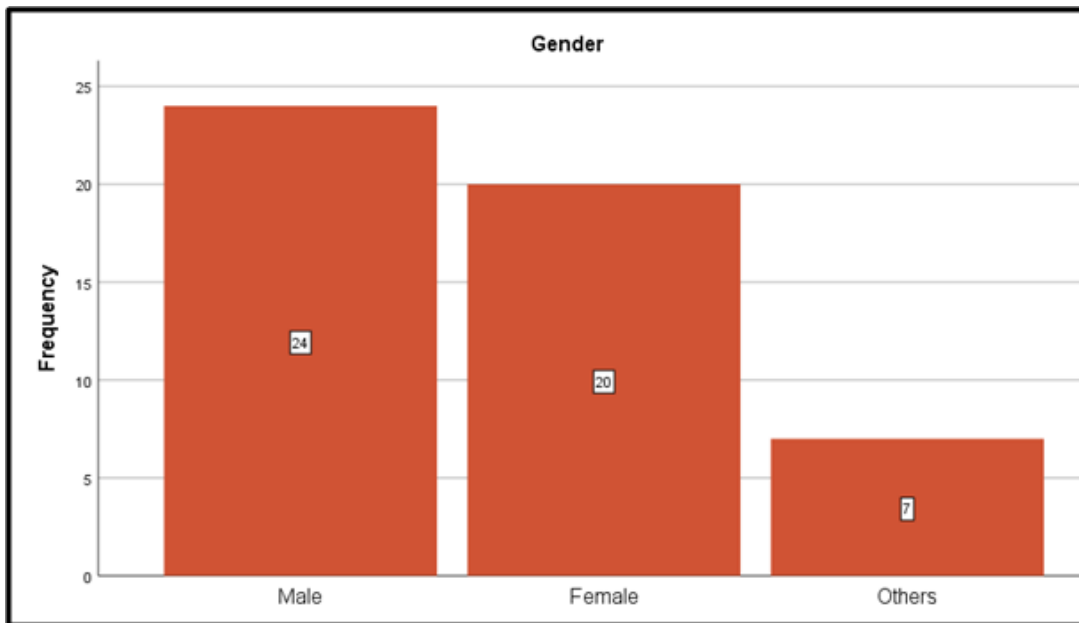


Figure 5: Gender

(Source: SPSS)

Gender is another demographic characteristic that indicates which gender mostly impacts this research topic. As per the above figure, this study includes males, females, and others. Based on the statistical result, male people are mostly impacted by this research study.

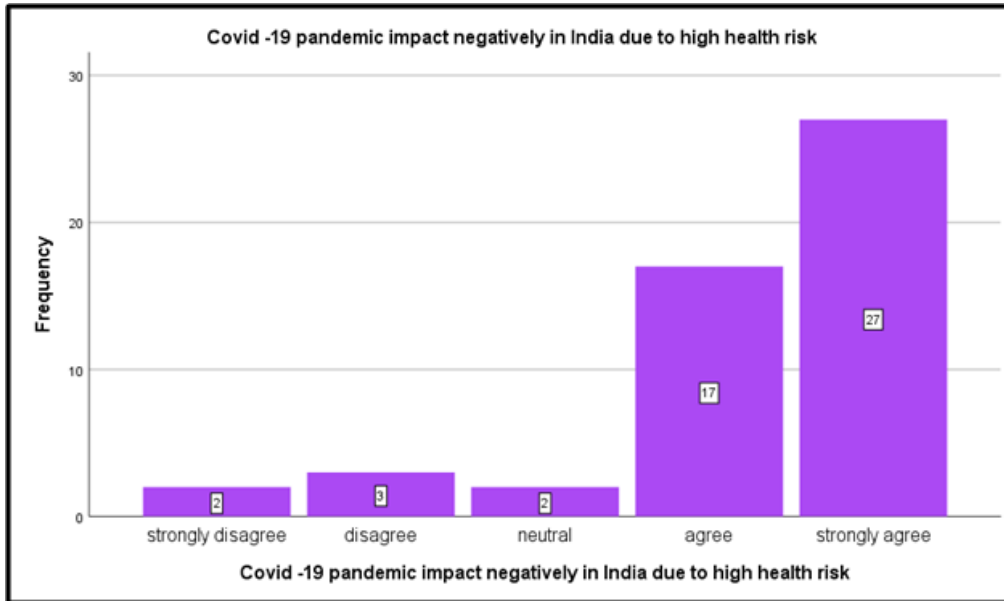


Figure 6: Covid -19 pandemic impact negatively in India due to high health risk

(Source: SPSS)

Covid-19 pandemic session indicates a health crisis in India due to the rapid spread of infectious diseases. In this regard, the survey questionnaire has included a question about “Covid -19 pandemic impact negatively in India due to high health risk”. In this question, “2% participants strongly disagree, 3% disagree, 2% neutral, 17% agree, and 27% strongly agree”. According to that, a high percentage of participants strongly agree with this question.

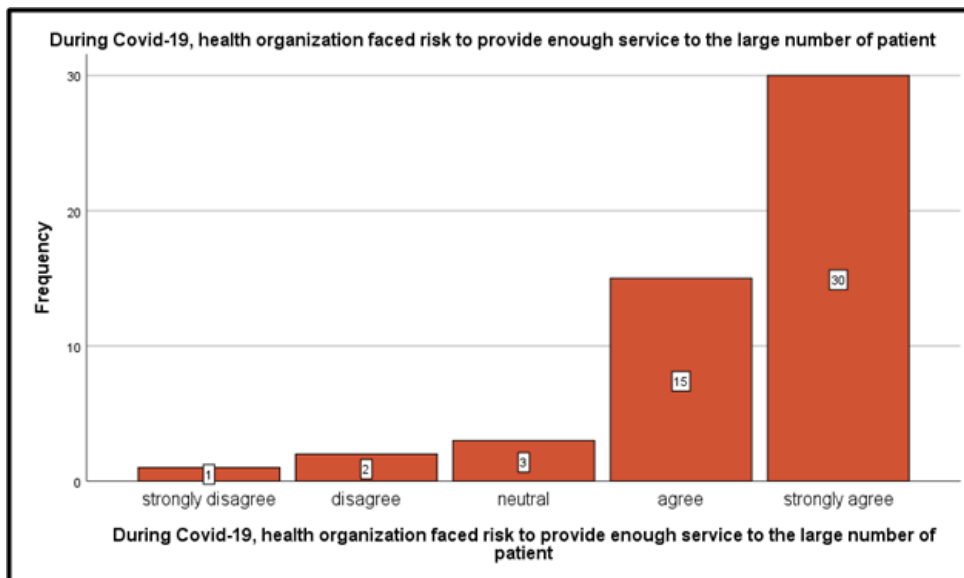
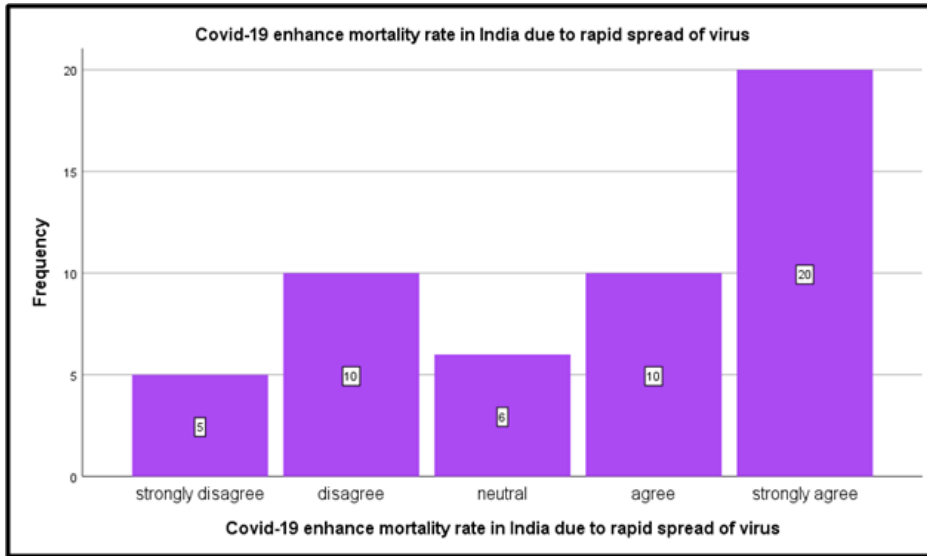


Figure 7: During Covid-19, health organizations faced risk to provide enough service to a large number of patient

(Source: SPSS)

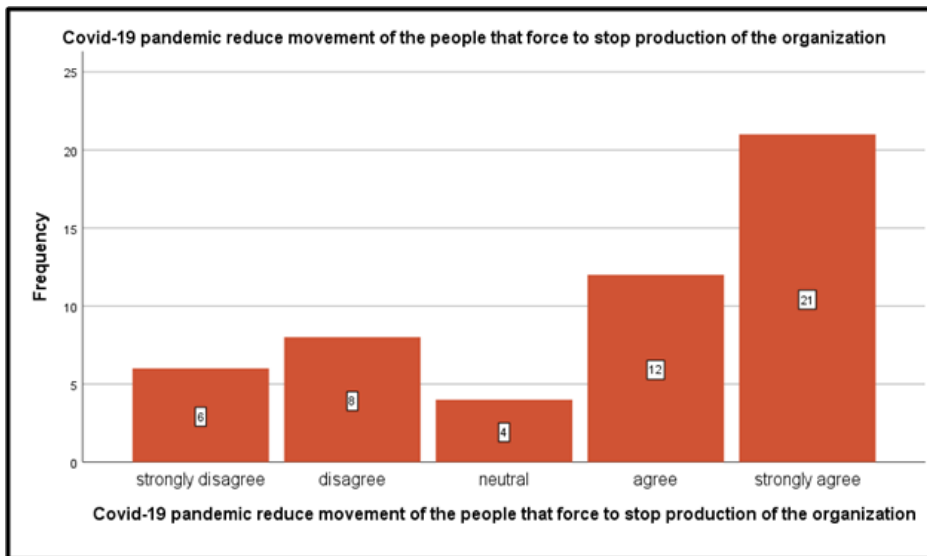
The covid-19 pandemic raised the risk to health care organizations due to unavailability of enough resources. According to that, the survey questionnaire of primary data has included a question about “health organizations faced risk to provide enough service to a large number of patients”. In this question, “1% of participants strongly disagree, 2% disagree, 3% neutral, 15% agree, and 30% strongly agree”. Result of statistical analysis indicates a high percentage of participants strongly agree with this question.



**Figure 8: Covid-19 enhance the mortality rate in India due to rapid spread of virus**

(Source: SPSS)

The rapid spread of the Covid-19 virus increases the mortality rate due to lack of health management. In this context, the survey questionnaire of primary data has included a question about “Covid-19 enhances mortality rate in India due to rapid spread of the virus”. In this question, “5% of participants strongly disagree, 10% disagree, 6% neutral, 10% agree, and 20% strongly agree”. Based on the statistical result, a high percentage of participants strongly agree with this question.

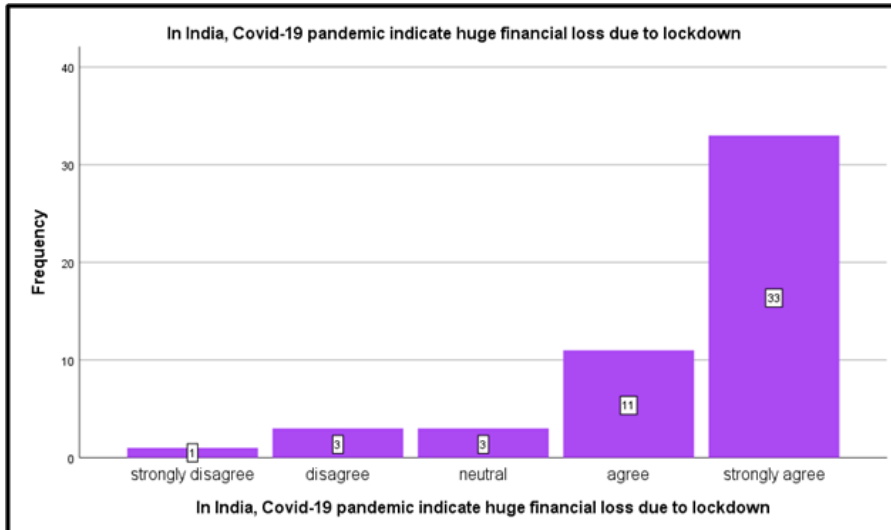


**Figure 9: Covid-19 pandemic reduces movement of the people force to stop production of the organization**

(Source: SPSS)

Lockdown during Covid-19 reduced movement of the people to maintain social distance. As per this concept, the survey questionnaire of primary data has included a question about “Covid-19 pandemic reduced movement of the people that forced the production of the organization”. In this question, “6% of participants strongly disagree, 8% disagree, 4% neutral, 12% agree, and 21% strongly agree”. According to that, a high percentage of participants strongly agree with this question.

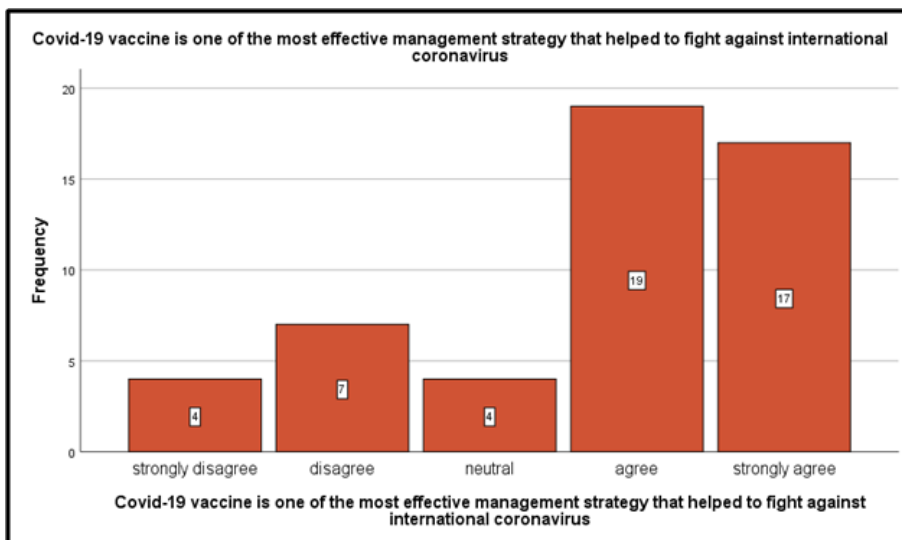




**Figure 10: In India, Covid-19 pandemic indicate huge financial loss due to the lockdown**

(Source: SPSS)

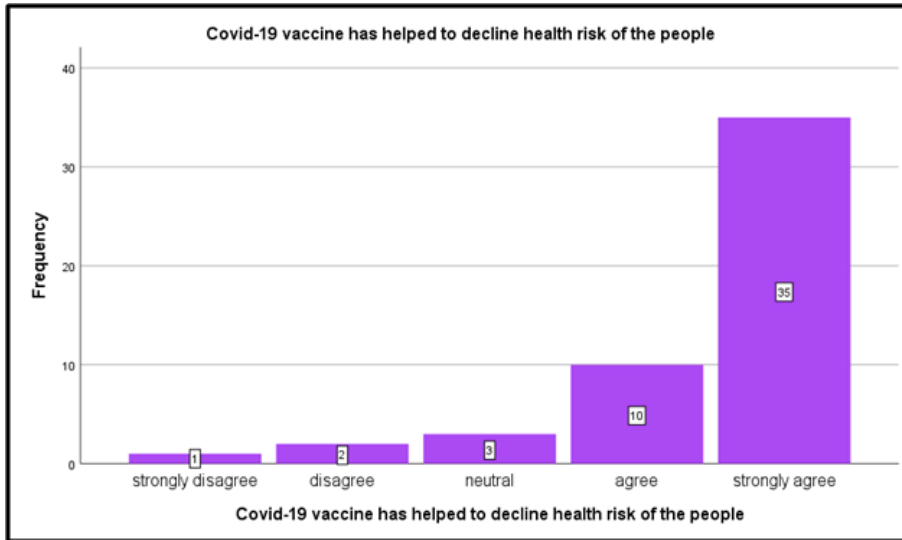
One of the most significant impacts of Covid-19 is high financial loss. Based on that, the survey questionnaire of primary data has included a question about “in India, Covid-19 pandemic indicates huge financial loss due to lockdown”. In this question, “1% of participants strongly disagree, 3% disagree, 3% neutral, 11% agree, and 33% strongly agree”. According to that, a high percentage of participants strongly agree with this question.



**Figure 11: Covid-19 vaccine is one of the most effective management strategies that helped to fight against the international coronavirus**

(Source: SPSS)

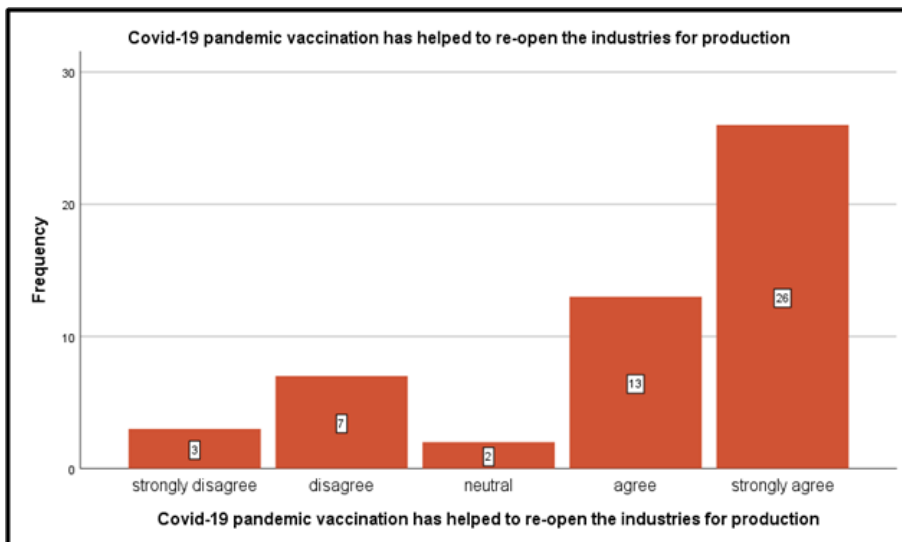
Covid-19 vaccine has helped the developing country to manage the rapid spread of Coronavirus. In this regard, the survey questionnaire of primary data has included a question about “Covid-19 vaccine is one of the most effective management strategies that helped to fight against international coronavirus”. In this question, “4% of participants strongly disagree, 7% disagree, 4% neutral, 19% agree, and 17% strongly agree”. Based on the statistical result, a high percentage of participants agree with this question.



**Figure 12: Covid-19 vaccine has helped to decline the health risk of the people**

(Source: SPSS)

Covid-19 vaccine has helped to decline the health risks of the country. Based on this concept, the survey questionnaire of primary data has included a question about “Covid-19 vaccine has helped to decline health risk of the people”. In this question, “1% participants strongly disagree, 2% disagree, 3% neutral, 10% agree, and 35% strongly agree”. According to that, a high percentage of participants strongly agree with this question.



**Figure 13: Covid-19 pandemic vaccination has helped to re-open the industries for production**

(Source: SPSS)

Vaccination has helped the industries to re-open the organizations for production to improve financial activity. In this regard, the survey questionnaire of primary data has included a question about “Covid-19 pandemic vaccination has helped to re-open the industries for production”. In this question, “3% participants strongly disagree, 7% disagree, 2% neutral, 13% agree, and 26% strongly agree”. Based on the statistical result, a high percentage of participants strongly agree with this question.

## DISCUSSION

The Coronavirus outbreak was one of the most effective threats for the world that raised several issues. In this regard, developing countries such as India have faced several changes during Covid-19 pandemic. One of the most significant impacts of Covid-19 in India is the high health crisis. This infectious virus reduces the physical strength of the people that indicate life risk. As per the result of primary data analysis, health organizations have faced risk to provide enough health service to the large number of patients. Lack of resources has created difficulties for the health organizations in India to provide proper treatment to the patients (Nimavat et al. 2021). In this regard, lack of medical support has increased the mortality rate in India during Covid-19 pandemic. On the other hand, Covid-19 pandemic disrupted financial activity in India effectively. During Covid-19, rapid spread of infectious disease has enhanced health risk for the people. In this context, the government of India implemented a lockdown to stop the outbreak of Coronavirus.

In this regard, the lockdown session has declined production of the organizations that indicate high financial loss of India during Covid-19 pandemic. At that point of time, most of the organization was forced to stop production due to maintaining restrictions of Covid-19. In this regard, a large number of people lost their jobs during Covid-19 (Goswami, Mandal & Nath 2021). Moreover, long-term unemployment, inability to work full-time, increasing cost has declined financial benefits of the organization. According to that, financial loss is one of the most significant impacts of Covid-19 in India. At that point of time, Covid-19 vaccine was a management strategy that helped to stop Covid-19 outbreak in India. As per the result of statistical analysis, most of the participants strongly agreed that Covid-19 vaccine has helped to decline health risk of the people.

In India, Covid-19 vaccination has enhanced the immunity power of the people to fight against Covid-19. Based on that, Covid-19 vaccination has helped to decrease the mortality rate in India. The first dose of Covid-19 vaccine begins to produce antibodies in the human body. Moreover, the second dose of Covid-19 provides a full immune system in the patient's body. According to that, Covid-19 vaccination has helped to protect the people from Covid-19 infectious disease. On the other hand, Covid-19 vaccination has helped to reboot the financial activity in India (Ijsem, 2022). According to the result of primary data analysis, Covid-19 vaccination has helped to re-open the industries for production. In this regard, vaccination has declined the health risk of the people. In this regard, industries re-open the organizations with vaccinated employees that improve financial growth of the country.

## CONCLUSION

Covid-19 pandemic is one of the most critical situations for India that indicate several risks and challenges. During Covid-19 situation, the government of India forced a lockdown due to the rapid spread of infectious disease. In this regard, lockdown sessions stop or reduce production of the organization that indicates high financial loss. Another most effective risk of India during Covid-19 pandemic was health crisis. During Covid-19, health organizations of India faced difficulties in providing support to a large number of patients. In this context, vaccination is one of the most significant management strategies that helped India to stop the rapid spread of Coronavirus. Moreover, Covid-19 vaccination has helped to reduce mortality rate in India.

## REFERENCES

1. Aju, (2020). *Covid-19*. Retrieved on: 5th January 2023, from: <https://ijsem.org/viewabstract.php?id=14160&volume=Volume7&issue=Issue12>. Jyothi (2021). *Consumer Behaviour: Impact of COVID-19*. Retrieved on: 5th January 2023, from: <https://ijsem.org/viewabstract.php?id=14146&volume=Volume8&issue=Issue1>.
2. Changotra, R., Rajput, H., Rajput, P., Gautam, S., & Arora, A. S. (2021). Largest democracy in the

- world crippled by COVID-19: Current perspective and experience from India. *Environment, development and sustainability*, 23(5), 6623-6641. <https://link.springer.com/article/10.1007/s10668-020-00963-z>
3. Chen, Q., & Wang, Y. (2021). Key-performance-indicator-related state monitoring based on kernel canonical correlation analysis. *Control Engineering Practice*, 107, 104692. <https://www.sciencedirect.com/science/article/pii/S0967066120302628>
  4. Dani, M. T., Singh, A. G., & Chaturvedi, P. (2021). COVID-19 vaccine hesitancy in India. *Cancer Research, Statistics, and Treatment*, 4(3), 437. <https://www.crstonline.com/article.asp?issn=25903233;year=2021;volume=4;issue=3;spage=437;epage=442;aulast=Dani>
  5. Duan, W., Zhao, Z., Cai, G., Pu, S., Liu, S., & Dong, X. (2022). Evaluating model uncertainty of an in situ state parameter-based simplified method for reliability analysis of liquefaction potential. *Computers and Geotechnics*, 151, 104957. DOI:10.1016/j.compgeo.2022.104957
  6. Eger, L., Komárková, L., Egerová, D., & Miřík, M. (2021). The effect of COVID-19 on consumer shopping behaviour: Generational cohort perspective. *Journal of Retailing and Consumer Services*, 61, 102542. [http://viduketha.nsf.gov.lk:8585/COVID19\\_Articles/GRA/The-effect-of-COVID-19.pdf](http://viduketha.nsf.gov.lk:8585/COVID19_Articles/GRA/The-effect-of-COVID-19.pdf)
  7. Goswami, B., Mandal, R., & Nath, H. K. (2021). Covid-19 pandemic and economic performances of the states in India. *Economic Analysis and Policy*, 69, 461-479. [https://www.researchgate.net/profile/Hiranya-Nath/publication/348381714\\_Covid-19\\_Pandemic\\_and\\_Economic\\_Performances\\_of\\_the\\_States\\_in\\_India/links/5ffbfdec299bf14088886c22/Covid-19-Pandemic-and-Economic-Performances-of-the-States-in-India.pdf](https://www.researchgate.net/profile/Hiranya-Nath/publication/348381714_Covid-19_Pandemic_and_Economic_Performances_of_the_States_in_India/links/5ffbfdec299bf14088886c22/Covid-19-Pandemic-and-Economic-Performances-of-the-States-in-India.pdf)
  8. Hupert, N., Marín-Hernández, D., Gao, B., Águas, R., & Nixon, D. F. (2022). Heterologous vaccination interventions to reduce pandemic morbidity and mortality: Modeling the US winter 2020 COVID-19 wave. *Proceedings of the National Academy of Sciences*, 119(3), e2025448119. <https://www.pnas.org/doi/full/10.1073/pnas.2025448119>
  9. Ijsem, 2022. *Inventory Management Practices in Manufacturing Industries during the COVID 19: A review* [Online] Retrieved on: 5<sup>th</sup> January 2023, from: <https://ijsem.org/viewabstract.php?id=15837&volume=Volume9&issue=Issue4>
  10. Jessica, (2022). *Building Better amidst the Coronavirus Disease (COVID-19) Pandemic: An Analysis of Critical Success Factors within Resilience to Natural Hazards and COVID-19*. Retrieved on: 5<sup>th</sup> January 2023, from: <https://ijsem.org/viewabstract.php?id=15905&volume=Volume9&issue=Issue7>.
  11. Yeshwanth, (2022). *Inventory Management Practices in Manufacturing Industries during the COVID 19: A review*. Retrieved on: 5<sup>th</sup> January 2023, from: <https://ijsem.org/viewabstract.php?id=15837&volume=Volume9&issue=Issue4>.
  12. Madan, A., Bindal, S., & Gupta, A. K. (2021). Social distancing as risk reduction strategy during COVID-19 pandemic: A study of Delhi-NCT, India. *International Journal of Disaster Risk Reduction*, 63, 102468. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8284069/>
  13. Mahmoudi, M. R., & Abbasalizadeh, A. (2019). How statistics and text mining can be applied to literary studies?. *Digital Scholarship in the Humanities*, 34(3), 536-541. Retrieved on: 5<sup>th</sup> January 2023, from: <https://academic.oup.com/dsh/article-abstract/34/3/536/5224798>
  14. Manish (2022). *Managing Global Management Teams in COVID and Post Lockdown Period*. Retrieved on: 5<sup>th</sup> January 2023, from: <https://ijsem.org/viewabstract.php?id=15778&volume=Volume9&issue=Issue1>.
  15. Asenahabi, B. M. (2019). Basics of research design: A guide to selecting appropriate research design. *International Journal of Contemporary Applied Researches*, 6(5), 76-89. <http://ijcar.net/assets/pdf/Vol6-No5-May2019/07.-Basics-of-Research-Design-A-Guide-to-selecting-appropriate-research-design.pdf>
  16. Mazhar, S. A., Anjum, R., Anwar, A. I., & Khan, A. A. (2021). Methods of data collection: A fundamental tool of research. *Journal of Integrated Community Health* (ISSN 2319-9113), 10(1), 6-10.
  17. Mazhar, S. A., Anjum, R., Anwar, A. I., & Khan, A. A. (2021). Methods of data collection: A fundamental tool of research. *Journal of Integrated Community Health* (ISSN 2319-9113), 10(1), 6-10. <http://medicaljournalshouse.com/index.php/ADR-CommunityHealth/article/download/631/496>

15. Nimavat, N., Singh, S., Fichadiya, N., Sharma, P., Patel, N., Kumar, M., ... & Pandit, N. (2021). Online medical education in India—different challenges and probable solutions in the age of COVID-19. *Advances in Medical Education and Practice*, 12, 237. Retrieved on: 5<sup>th</sup> January 2023, from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7939236/>
16. Reiter, P. L., Pennell, M. L., & Katz, M. L. (2020). Acceptability of a COVID-19 vaccine among adults in the United States: How many people would get vaccinated?. *Vaccine*, 38(42), 6500-6507. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7440153/>
17. Sharmin, A., Rahman, M., Ahmed, S., & Ali, S. M. (2021). Addressing critical success factors for improving concurrent emergency management: lessons learned from the COVID-19 pandemic. *Annals of Operations Research*, 1-35. <https://link.springer.com/article/10.1007/s10479-021-04447-9>
18. Vu, T. T. N. (2021). Understanding validity and reliability from qualitative and quantitative research traditions. *VNU Journal of Foreign Studies*, 37(3). <https://js.vnu.edu.vn/FS/article/download/4672/4225> 89. <http://ijcar.net/assets/pdf/Vol6-No5-May2019/07.-Basics-of-Research-Design-A-Guide-to-selecting-appropriate-research-design.pdf>
19. Yang, L., Liu, S., Liu, J., Zhang, Z., Wan, X., Huang, B., ... & Zhang, Y. (2020). COVID-19: immunopathogenesis and Immunotherapeutics. *Signal transduction and targeted therapy*, 5(1), 1-8. <https://www.nature.com/articles/s41392-020-00243-2>

## APPENDIX

### Questionnaire

1. Age
2. 25-30
3. 31-35
4. 36-40
5. 40 above
6. Gender
7. Male
8. Female
9. Others

(Please rate your opinion against the attached statements based on the scale suggested below- 0 = strongly disagree, 1 = disagree, 2 = neutral, 3 = agree, 4 = strongly agree)

Statements	0	1	2	3	4
3. Covid -19 pandemic impact negatively in India due to high health risk.	2	3	2	17	27
4. During Covid-19, health organization faced risk to provide enough service to the large number of patient.	1	2	3	15	30
5. Covid-19 enhance mortality rate in India due to rapid spread of virus.	5	10	6	10	20
6. Covid-19 pandemic reduce movement of the people that force to stop production of the organization.	6	8	4	12	21
7. In India, Covid-19 pandemic indicate huge financial loss due to lockdown.	1	3	3	11	33
8. Covid-19 vaccine is one of the most effective management strategy that helped to fight against international coronavirus.	4	7	4	19	18
9. Covid-19 vaccine has helped to decline health risk of the people	1	2	3	10	35
10. Covid-19 vaccination has helped to re-open the industries for production.	3	7	2	13	26