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## THE INVESTIGATORY STUDY ON COVID - 19 VACCINES

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### ABSTRACT:

*The whole world is shaken by the on-going Global pandemic COVID -19. Though more than a year has passed, still the world is in the clutches of the pandemic. But now there is the Ray of hope coming forward in the form of a vaccine. On one hand there is a spread of optimistic approach among people but on other hand there are a lot of apprehensions regarding vaccines. People suspect the authenticity and effectiveness of the vaccines as they were launched in a very short period. People are concerned about the expected long term adverse effects of the vaccine, it's capacity to deal with changing strains of virus etc. Therefore this investigatory study is conducted with an objective to collect authentic information from the Frontline health workers like doctors and nurses and also from medical researchers, pharmacists and chemists, so that the queries and doubts among common people can be cleared up.*



*This research study is divided into four parts. The first part introduces the Pandemic and the need for the invention of the medicines to protect mankind from this unprecedented situation. The second part deals with analysing various facts and myths about this most awaited vaccine. In the third part primary data analysis is done and finally, in the 4th part recommendations are given and conclusion is derived.*

**KEYWORDS:** coronavirus, covid-19, pandemic, vaccine.

### INTRODUCTION AND NEED OF THE STUDY:

The whole world is experiencing an unprecedented situation called COVID-19, a global pandemic. The root cause of this pandemic is coronavirus. In scientific language, it is called Severe Acute Respiratory Syndrome Coronavirus - 2 ( SARS- CoV- 2). Towards the end of the year 2019, this virus was identified in Wuhan, China and within a few months it got spread all over the world. Initially the World Health Organisation (WHO) considered it as a health emergency of international level but on 11th March 2020 officially declared it as Pandemic. Though more than a year has passed, still the world is in the clutches of the pandemic. But now there is the Ray of hope coming forward in the form of a vaccine. On one hand there is a spread of optimistic approach among people but on other hand there are a lot of apprehensions regarding vaccines. Though a lot of information is being shared on social media about the authenticity and effectiveness of the vaccines, people have doubts as it was launched in a very short period. People are worried about the expected long term adverse effect of the vaccine,

its capacity to deal with changing strains of virus etc. There is utter confusion especially among the non-medico population. Therefore this investigatory study is conducted with an objective to collect authentic information from the medical experts so that the queries and doubts among common people can be cleared up.

### **OBJECTIVE:**

The sole objective of the study is to share authentic information about the COVID-19 vaccines to the public so that various doubts and apprehensions can be sorted out.

### **HYPOTHESIS:**

H0 : COVID-19 vaccines are not safe for public use.

H1: COVID-19 vaccines are safe for public use.

### **RESEARCH DESIGN:**

This study is based on both, the primary and secondary data sources.

Primary data is collected from the frontline medical / health workers. A questionnaire containing around 30 questions was circulated among the doctors and nursing staff of the various hospitals of the city. Questions were focussed on the fact finding about COVID-19 vaccines

Secondary data is collected through various medical journals and government official sites established for the purpose of sharing information with the public

### **THE STUDY:**

Covid-19 virus transmitted through small airborne droplets exhaled by an infected person. These particles if inhaled or reach to the mouth, nose or eyes of a healthy person directly or through touching with contaminated hands results in transmission of virus. The chances of spreading infection is very high when people are without proper protection like PPE, face shield or at least mask. An infected person can spread the infection for up to 20 days. Spreading the virus is possible even by the asymptomatic infected person. During this unprecedented medical emergency medicines are not readily available to deal directly with the virus. The available medicines can treat only the symptoms like fever, body ache, weakness etc. Therefore prevention is the only available solution which can be done by maintaining physical distance, wearing face shield or face mask in public, hand washing with soap and water or sanitizing, disinfecting the surface and self-isolation, at individual level and measures like lockdown, work from home policy at country level needs to be adopted. But as a result of that another serious economic challenge has emerged in the form of a great social and economic destruction leading to the largest global recession in history. To overcome the situation some assured medical treatment is needed therefore the whole world has great expectations from the vaccine developers. Vaccine is considered as the key of the door which can open the lockdown and bring the world back to normal.

Vaccination is considered as a major preventive measure to reduce the chances of infection. Therefore people all over the world anxiously waited for the vaccine. The medical researchers and scientists worked restlessly towards innovation of vaccines and their hard work got paid. Phase III trials of vaccines have demonstrated efficacy up to 95% in preventing symptomatic COVID-19 infection. By April 2021 around 14 vaccines all over the world are authorised by regulatory authorities for public use.

### **INDIAN COVID-19 VACCINES**

Even the Indian scientists were not behind. Indian Medical researchers have also developed two vaccines namely Covaxine and Covishield. Covaxine is developed by Bharat biotech. It has 24 years of experience in this field and has developed 16 vaccines which have been used in 123 countries of the world. The Covaxine contains a dead coronavirus. This dead virus cannot infect the person receiving the vaccine but is still able to instruct the human immune system to build a defensive reaction i.e.

antibodies to fight the infection. It is the well-established and time tested method in the field of vaccine technology. By using this inactivated vaccine technology, vaccines for various diseases like influenza, polio etc. have been successfully developed. This vaccine demonstrated 81% interim efficacy in preventing COVID-19 infection in those without prior infection after the second dose.

Covishield vaccine is manufactured by the Serum Institute of India. It contains weakened and modified common cold virus which looks like coronavirus extracted from chimpanzees. According to Government data Covishield vaccine has shown 70% efficacy after the second dose. The developers of the both the vaccines, Covaxin and Covishield have claimed that human immunity against infection of coronavirus increases by about 90% after vaccination. Covaxin can be applied only to people above 18 years of age whereas Covishield can be applied to people above 12 years of age.

### THE FACTS ABOUT CORONA VIRUS AND VACCINATION

UV lights in the sunlight have the capacity to kill coronavirus.

Though the chances of spreading infection through excreta of a COVID-19 patient are very low, it is not zero. It is observed in few cases of corona infected patients suffering with diarrhoea, COVID-19 viral RNA fragments in the droppings.

Since the act of smoking involves frequent contact of fingers, lips and cigarette, it increases the possibility of transmission of virus from hand to mouth. Therefore smokers need to be very careful against the infection.

The gap between the two doses of vaccine is needed as the human body requires some time to overcome the mild side effects of the vaccine such as swelling, itching, pain, redness etc. at the site of injection. Occurrence of mild body pain, cold, fever, headache etc. is also very normal and should not be worried about as these issues last for a very short stretch of time. If required some medical assistance can also be taken.

It doesn't make any difference whether the vaccinated person gets any reaction or not. Even though these reactions indicate that the immune system is responding, absence of any reactions should not be concluded as ineffectiveness of the vaccine.

### DATA ANALYSIS

The primary data is collected from frontline health workers and the majority of ( 57%) respondents are doctors. Out of total 43% respondents have work experience of above 20 years, 29% have work experience of 16 to 20 years.

71% of the respondents have received at least one dose of vaccination. 43% of the respondents were infected by COVID-19 before vaccination and 57% of the respondents have not been infected at all. 43% of the respondents' family members who are not frontline medical workers are vaccinated and the rest are yet to receive the dose.

Majority of (71%) of the respondents feel that all people should take the vaccine. 57 % of the respondents feel vaccination of the entire population of India is possible in near future and remaining feel that we must try for it, though it is a herculean task. Maximum respondents (86%) are assured about the safety and efficiency of the vaccine though it has been developed in such a short period. 86% of the respondents are confident that the Indian vaccines are equally effective as compared to the ones introduced in other developed countries. 86% of respondents are of the opinion that COVID-19 recovered people should take the vaccine. Majority of (71%) the respondents feel there are no long term adverse side effects of the vaccine. All (100%) of the respondents are of the opinion that maintenance of cold chain temperature is essential for the vaccine but 71% respondents feel that the cold chain temperature is properly maintained throughout the process of vaccination. Only 29% of the respondents feel the gap of 5 to 6 weeks between the two doses of vaccines is the danger zone for people with comorbidities while the majority of respondents feel that people with comorbidities are safe during the gap, if they take due care. All (100%) of the respondents have confirmed that it is necessary for a person to receive the same vaccine during the second dose, 71% of the respondents are assured about the maintenance of proper records about it at the vaccination centre. Out of the total

57% of the respondents are confident about the capacity of the vaccines to control new and changing strains of coronavirus. More than half (57%) of the respondents have suggested not vaccinating when blood pressure and sugar level is not normal. 71% of the respondents feel it is safe to take a vaccine while other medical treatment is on, at the most the gap of 2 days before vaccination is sufficient. Majority of (86%) respondents are against taking vaccines during pregnancy and are also against the vaccination immediately after delivering a child. 71% of respondents are of the opinion that it is safe for women to vaccinate during the menstrual period.

### **CONCLUSION:**

Vaccination can be considered as the most effective preventive measure against coronavirus infection. It can boost the human immune capacity. It is expected to train the immune system to recognise the virus and kill it.

Both Indian vaccines are safe and effective to fight against coronavirus. The only way to protect human life and bring it back to normal is mass vaccination. So all should be vaccinated without any further delay. Vaccination will help a person to protect himself, his / her family and the whole society against this deadly disease.

### **TESTING OF HYPOTHESES:**

On the basis of the findings, the hypotheses H1: COVID-19 vaccines are safe for public use, is proved.

### **LIMITATIONS OF THE STUDY:**

The study was based upon the opinion shared by the frontline health workers and has no first hand laboratory testing support.

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