



Side effects of Covid-19 vaccines among population of Karachi-A survey based study

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ABSTRACT

In management of Covid-19 many vaccines had developed to date and still 105 vaccines are in clinical trials. According to statistics and research, 6.54 billion doses of covid-19 vaccines have been given to people worldwide till October 2021. After the approval of vaccines by the government of Pakistan, a hyped has been created by citizens of Pakistan about side effects of vaccines. So, we have performed a survey to evaluate the side effects of covid-19 vaccines in population of Karachi this survey is performed to scrutinize the effects people experienced after getting vaccinated. We have collected information from august to September 2021 through online portal The data we have gathered is limited because only 500 people have filled the form. we also tried to evaluate factors involved in causing any side effect by comparing patients factors Some people get experienced the undesirable effects, majority of participants i.e 87.8% had not effected with covid-19 before getting vaccinated, some people felt shortness of breath Moreover, some participants had noticed some other effects included cough, drowsiness and muscle pain. We have regulated the survey randomly and concluded that most of average populace favoured Sinovac with minimal side effects.

Key words: covid-19, vaccines, side effects

INTRODUCTION

The severe acute respiratory syndrome coronavirus2 (SAR-CoV2) causes corona virus 2. as it is recognized in December 2019 so it is known as COVID19. The target side of this disease is lungs as it is caused by respiratory syndrome.[1] Previous outburst of coronavirus are due to MERS (Middle East respiratory syndrome) and SARS which are causing life threatening conditions for the health of public. In the month of December

2019 there were a number of patients who were admitted in hospitals due to pneumonia and the cause of pneumonia was unknown, and the patients who were admitted to hospitals were the people of china who ate some wet animals and seafood from market located in Wuhan. When there is increasing death rate due to this disease. To WHO 165069258 cases were reported among which the date ratio is 3422907.[2] So vaccines have been administered to those people who got affected with this virus. There is approval of some vaccines out of 100

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vaccines for COVID on the basis of clinical trials. The effectiveness of vaccines depends on some factors which are the time period or duration of immunity, the working of vaccine against variant strains of the disease and how much vaccines can cope out the transmission of diseases. The vaccines which are considered to be effective for COVID are Pfizer, Moderna, Sinopharm, Sinovac, AstraZeneca and Sputnik. Government declared that all people should get vaccinated for the protection against corona virus.[3] The vaccines of COVID have been passed from all four phases of vaccine development. There is a phase in which there is an administration of booster dose for those who already get vaccinated for extra protection against multivalent COVID and specific variant strains. There are a side effects of vaccines which are noticed in the people such as muscle fatigue, fever and chills, joint pain and headache. While giving the vaccine, vaccine safety is also taken under consideration and should be closely monitored by the person who is giving vaccines or the regulators. Some vaccines are defined below;

Sinopharm:

the first vaccine which is authorized by WHO in emergency was Sinopharm which is produced by BBIBP. [4][10] As this vaccine is giving the good response on human immune system when clinical trials were applied and this vaccine was also tested on animals and it is giving a good response and it was noticed that it is effective against COVID about 79%. It is more acceptable vaccine because it has fewer side effects and can also store on normal refrigerator temperature. Its side effects included headache, nausea, fatigue, fever and allergic reactions but its side effects observed in the population were very low. All adverse reactions which were reported were very mild and moderate so in short it is also safe vaccine with low side effects. [5][11]

Sputnik: It is a recombinant vaccine for COVID which was developed by Gamaleya institute of research in Russia by using the vector of human adenovirus. Its effectiveness against COVID is 91.6%. in immunodeficient person it is less effective. The protection of this vaccine is not like other vaccines. There are some precautions to use this vaccines like it is contraindicated in person like during lactation and pregnancy and also it not for those people who are less than 18 Side effects included: fever and seizures and allergic reactions, congestion of nasal headache, pain and swelling[6]

Astra Zeneca: The people who are 18-year age or above 65, the AstraZeneca vaccine is appropriate and this vaccine is developed by Indian serum institute. This vaccine is not recommended for emergency yet. The serious side effects included:

blisters at the side of injection, inflammation and tenderness.[7]

Sinovac: Sinovac vaccine is approved by emergency department for COVID on June on the basis of safety and efficacy. It is produced by pharmaceutical company of China. The rate of its efficacy is 50.4% to prevent the symptomatic infection and on disease 67% is effective Its side effects included tiredness, fever and aches of muscles.[8]

Pfizer: Pfizer is approved on 2021, august. The administration of these vaccines can be applicable on 16 years of age and above that. Its brand name is Comirnaty. Its safety and efficacy are also approved for people among 16 and older than that. Its side effects included; fever, nausea and allergic reactions. The vaccines which are defined above are mostly using vaccines in the world.[9-12]

MATERIAL AND METHOD

We organized a survey that demanded the populace of various age groups to respond over the kind of vaccination they went through and the side effects they faced. Also assured whether they had been affected by any comorbidity which ended in any sudden outcome they had to face. We examined the variations with inside the after affects primarily based totally on the age & gender using suitable predefined variables. To specify the numerous vaccine utilization and identity maximum favoured one we used foremost content material evaluation for the survey. We stated five distinctive varieties of vaccines to check the most preferred one. Also, we confirmed the after impacts of each vaccine alongside the comorbidities with the aid of using the survey cited queries. We assured that if any side-effect was observed whether it was purely from vaccine or the patient was on any drug therapy, to identify any kind of interaction causing the side-effect. The questions designed were based on distinctive surveys formerly done. We used to google form to prepare the questionnaire. The statistical data was also collected from google form data analysis. Based on the responses executed from 500 people the conclusion was determined across age, gender, comorbidities and preferable population vaccine. We regulated the survey randomly and concluded that most of average populace favoured Sinovac with minimal side effects.

RESULT

In this survey based form we researched on side effects of COVID-19 vaccines in Pakistan. We got 82 responses from different age groups 72% (18-25 years), 11% (28-35 years), 11% (36-50 years) and 6.1% above 50 years in which 95.1% are completely vaccinated and 4.9% are not vaccinated.

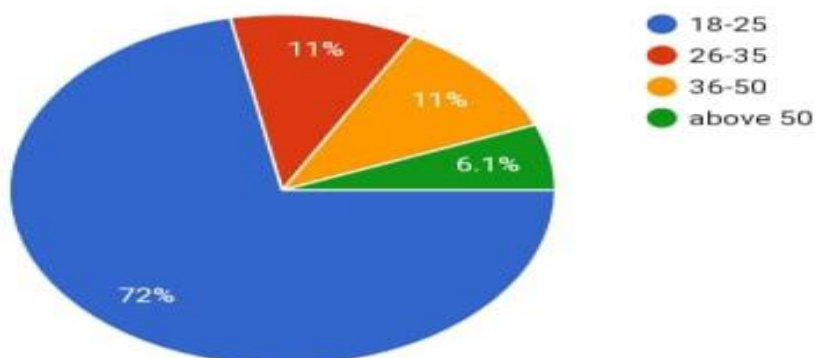


Figure 1: Responses of Covid Vaccines among population

From this survey 87.8% were not affected from COVID before getting vaccine while only 12.2% were effected with COVID before getting vaccine. In these responses 84.1% didn't get any type of medication at the time of vaccination however only 15.9% were on medication at the time of vaccination. Hypertension, diabetes and asthma

are more common problem in some of these persons as compared to other diseases. Among different vaccine brands 47.6% had vaccinated from Sinovac, 29.3% from Sinopharm, 11% from Cansino, 8.5% from AstraZeneca and few got Sputnik.

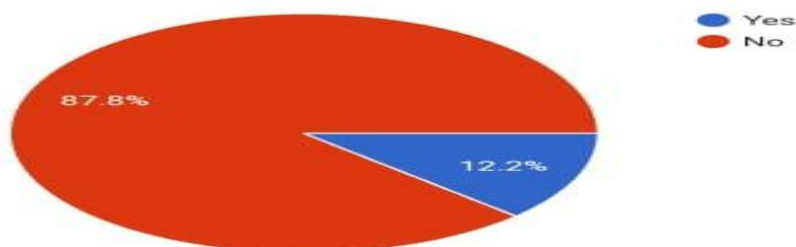


Figure 2: Graphical Representation People who are affected with Covid -19 Before getting vaccinated

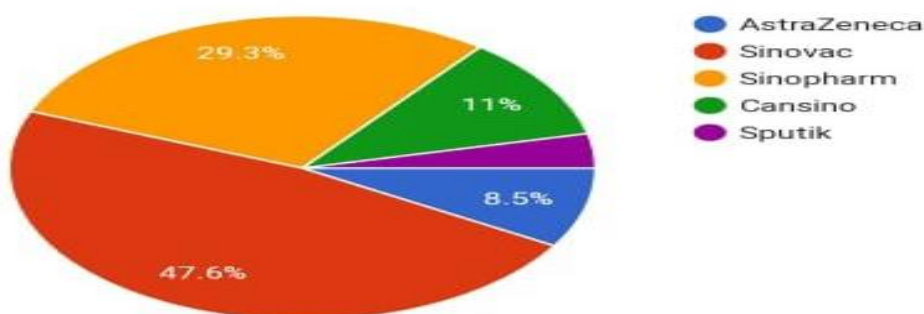


Figure 3: Graphical representation of which brand of vaccine people get.

53.7% felt mild headache or soreness at the site of action while 46.3% didn't feel anything at the site of action. 40.2% got their dose more than a month ago, 31.7% got one month before, 18.3% one week before and only 9.8% one day before. Only 28% experienced undesirable effect after getting vaccine 58.5% felt no undesirable effect after vaccination while 13.4% had no idea that they feel any

undesirable effect or not. Most common undesirable effect was persistent headache in 45.1%, 18-20% had fever with joint pain, 5.9% felt shortness of breath, 5.9% severe abdominal pain, 2% cough and fatigue, 2% muscle pain, 2-4% drowsiness and fatigue 26-30% didn't feel any undesirable effect.

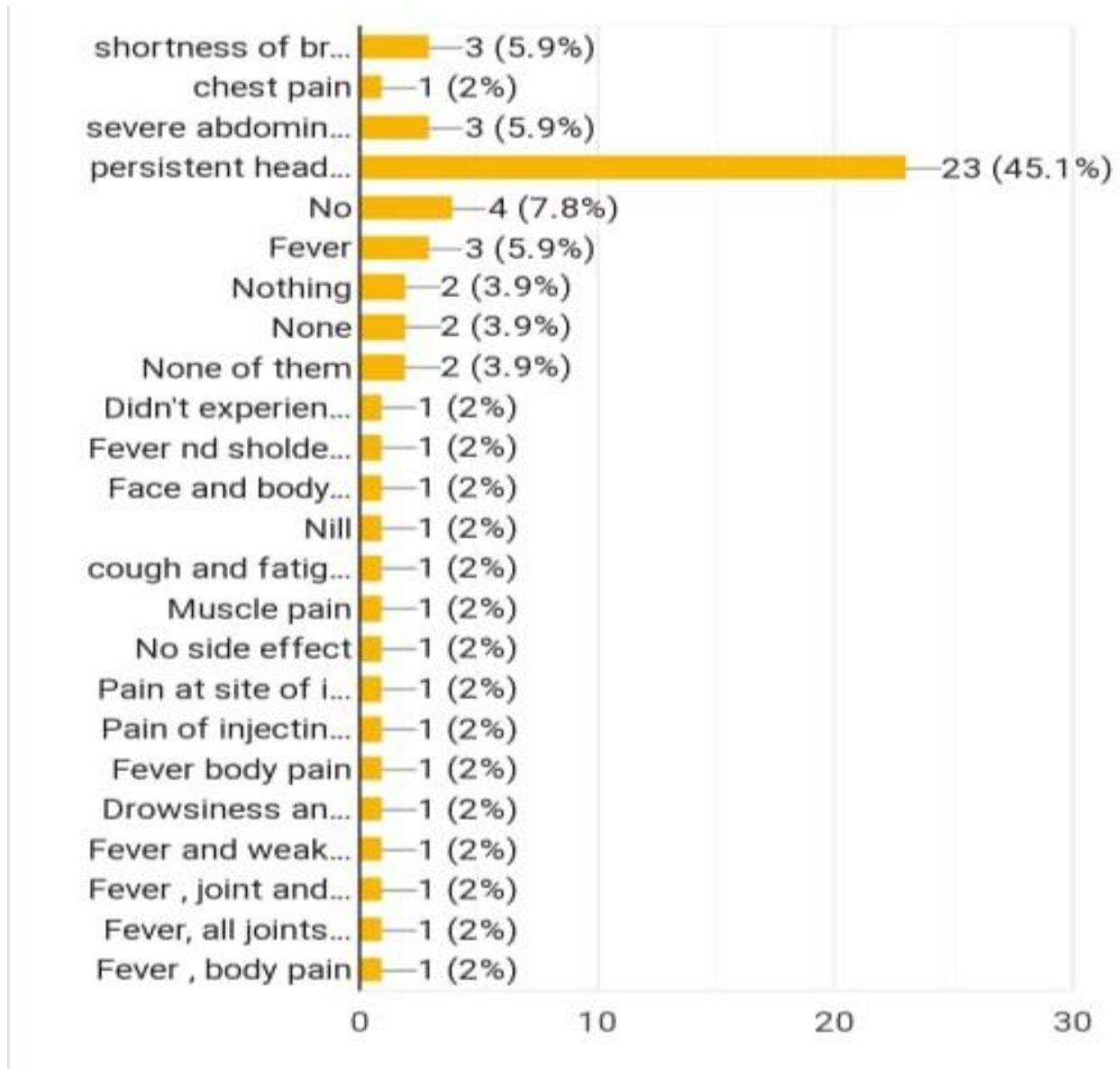


Figure 4: Undesirable effect of Covid-19 vaccination

DISCUSSION

Here we are discussing about the side effects of Covid vaccines in Pakistan. We done online survey-based research on people who got vaccinated and collected 500 responses from which mostly people are vaccinated. In our survey based analysis 72% age group lie between 18-25years and i.e: our survey mostly based on youngsters. 87.8% were not affected from COVID before getting vaccine while only 12.2% were affected with COVID before getting vaccine. We included different COVID vaccine brands of Pakistan in this survey like **Sinovac, Sinopharm, Cansino, Astrazeneca** and **Sputnik**. Mostly people were vaccinated from **Sinopharm** or **Sinovac** however only few got vaccinated from **Astrazeneca, Cansino** and **Sputnik**. Some of the people felt soreness at the site of injection.

When we asked “how many days before you got your first dose?” Mostly people got their first dose more than a month ago i.e: 40.2%, 31.7% got one month before, 18.3% one week before and only 9.8% one day before. Mostly people were not on medication at the time of vaccination and very few were on medication because our survey is mostly lie between the age of 18-25 years and few were old. Most common diseases among these were hypertension, Asthama, CVD’s and diabetes while some of them were suffering from PCO’s and depression.

We have observed that most of the people didn’t feel any undesirable effect after getting vaccine only 25-30 persons felt some undesirable effects in which most common were persistant headache, fever and bodyache from Sinovac, Sinopharm,

Astrazeneca, Cansino and Sputnik while mild fever and bodyache are common after getting vaccine so doctors suggested to take paracetamol if you feel fever or bodyache.

Few different cases of undesirable effects from Sinovac were Face and body swelling, severe abdominal pain, chest pain, persistent headache and shortness of breath. Some of the people who got vaccinated from Sinopharm also felt some undesirable effects like persistent headache was common and a single case of abdominal pain was observed while some of them who got Cansino felt cough, fatigue, shortness of breath, persistent headache and drowsiness. Astrazeneca didn't show any undesirable effect it only showed fever and persistent headache which is not an undesirable effect it is common and Sputnik undesirable effects were severe abdominal pain and cough.

So we have observed that only few of them show undesirable effects and we are not adding fever and body pain in the undesirable effects as it is almost

common among these people who got vaccinated. Undesirable effects were like shortness of breath, severe abdominal pain, face and body swelling and chest pain but these cases are few so we don't say that it is an undesirable effect because the activity of every drug or medicine is different in every human body i.e: the pharmacokinetics or pharmacodynamics similarly with the vaccine it shows some different cases may be because of the different immune function of an individual .

CONCLUSION

In management of Covid-19 many vaccines had developed till to date and still 105 vaccines are in clinical trials. According to that We have regulated the survey randomly , most of the people were vaccinated from **Sinopharm or Sinovac** however only few got vaccinated from **Astrazeneca, Cansino and Sputnik**. We have observed that only few of them show undesirable effects Some of the people felt soreness at the site of injection. From our study we have concluded that most of average populace favoured Sinovac with minimal side effects.

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