

Review Article

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Vasanth.R*

Senghundhar College of Pharmacy

Gowtham.K, Surendra Kumar.M

Senghundhar College of Pharmacy

Corresponding Author

Vasanth.R

Senghundhar College of Pharmacy

svmkingvikashspl@gmail.com

SURVEY OF UPDATED VACCINE-COVID-19

ABSTRACT

The World Health Organization has recommended that individual governments identify vaccine hesitancy areas. It is proposed that the governments, with the aid of local organizations, educate and implement social insights on the vaccination so that high population levels are covered with this safe immune program. Results: Our survey revealed 92% definite response, 3% low-level response, and 5% high-level response for vaccine hesitancy, while 6% had resistant views on the COVID-19 vaccine. Individuals who had higher income levels, lived in a society, maintained social distancing, had downloaded the COVID-19 update app, showed a positive attitude towards their government, and more confidence in their healthcare system were more inclined towards the vaccination Methods: A longitudinal online survey covered 3000 adults from India. We examined the demography, behavioral (socio-economic) attitude, vaccine hesitancy, vaccine resistance for the COVID-19 vaccine. The specific reasons for the COVID-19 vaccine decline were also evaluated. The role of government-induced COVID-19 vaccine policy measures can always be beneficial to cause this shift from disbelief to confidence within the population. The most common reasons for declining the COVID-19 vaccine were post-vaccine scare of adverse health effects and accepting the information.

Keywords

COVID-19, Public Health, Prevention, Decline, Government

1. INTRODUCTION

The WHO declared COVID-19 as a pandemic in March 2020 and, later during the year, stated that COVID-19 vaccine coverage is the only long-term solution for the fight against the COVID-19 pandemic [01]. India has a population of over 1390 million people. The government has presently recommended all its citizens within the inclusion criteria to be immunized by the two vaccines, namely the Covishield (the World Health Organization (WHO)-approved Astra Zeneca vaccine) and Covaxin (approved by India's drug-regulator and locally manufactured by Bharat Biotech). This safe and effective platform, along with identifying vaccine hesitancy "hot spots" within individual countries, will be a crucial step to resolve the COVID-19 pandemic. The immunity within a community is a result of numerous factors. Herd immunity depends on the percentage of the population vaccinated, the effectiveness of the vaccine, and the ineffectiveness of the virus within the population [02]. The virus infectivity within the population can be retarded by adequate vaccination coverage. Estimates suggest that to achieve herd immunity when a vaccine is 100% effective, 67% of the population needs to be vaccinated [03]. However, with the presently available vaccines with 80–85% effectiveness, 75% vaccine coverage is required to ensure COVID-19 elimination and control within the population [04]. The aim of this study is to present the formal analysis and results of a national survey that represents the importance of vaccination coverage within the country to fight COVID-19. We present the demography, behavioural (socio-economic) attitude, vaccine hesitancy, and vaccine resistance to the COVID-19 vaccine. We distinguish vaccine-hesitant people from people who are sure to get the vaccine and examine the vaccine-resistant population. Given the Indian government's active role in providing vaccines at a subsidiary cost, we hypothesize the confidence in the government and healthcare sectors, their attitudes, and adherence towards the delivery of COVID-19 vaccines to the population will play a very vital role in a successful vaccination outcome. COVID-19 vaccines marked a pivotal moment in the global response to the pandemic, offering a critical tool in reducing

infections, hospitalizations, and deaths. Since the first vaccines became available in late 2020, several vaccines have been developed, distributed, and administered on a massive scale. This updated review highlights key developments in the ongoing journey of COVID-19 vaccine introduction, focusing on the progress made, challenges faced, and lessons learned. The COVID-19 pandemic has led to an unprecedented global response, with vaccines being at the forefront of efforts to curb the spread of the virus. Since the emergency approval and subsequent rollout of COVID-19 vaccines, there has been widespread public interest in their development, efficacy, safety, and distribution. These vaccines have been developed at record speed, leveraging decades of research in mRNA and viral vector technologies. Their introduction has provided hope in the fight against COVID-19, offering a pathway to immunity for populations across the globe. However, the rapid pace of development has also raised questions and sparked debates around issues like vaccine equity, hesitancy, and long-term effects. This review provides an updated survey of the available COVID-19 vaccines, exploring their performance, safety profiles, public reception, and the challenges faced in achieving global immunization.

2. BACKGROUND OF THE STUDY

The global race to develop a vaccine for COVID-19 started soon after the World Health Organization (WHO) declared the outbreak a pandemic in March 2020. The aim was to develop safe, effective vaccines quickly while maintaining the rigorous standards of clinical research. This review focuses on the background of COVID-19 vaccine development, key platforms used in the creation of these vaccines, and the challenges faced during their rollout.

Vaccine Development Platforms

COVID-19 vaccines were developed using various platforms, some of which had been studied previously for other diseases, while others were newly adapted for this pandemic. The key platforms include:

- **mRNA Vaccines:** These vaccines, such as the Pfizer-BioNTech and Moderna vaccines, use messenger RNA to instruct cells to produce a protein that triggers an immune response. This platform had not been used in widely distributed vaccines before COVID-19, though it had been in development for decades.
- **Viral Vector Vaccines:** Vaccines like the AstraZeneca and Johnson & Johnson vaccines use a modified version of a different virus (not the SARS-CoV-2 virus) to deliver instructions to cells, inducing an immune response. This platform had been used in vaccines for Ebola and other diseases.
- **Protein Subunit Vaccines:** These vaccines, including the Novavax vaccine, use harmless pieces of the virus (often the spike protein) to elicit an immune response.
- **Inactivated or Attenuated Virus Vaccines:** Traditional vaccine platforms such as Sinopharm and Sinovac use a weakened or inactivated form of the virus to trigger immunity. This platform had been widely used in vaccines for other diseases like polio and influenza.

Phases of Vaccine Development

The COVID-19 vaccine development process was expedited through overlapping clinical trial phases without compromising safety. The typical stages of vaccine development include:

1. **Preclinical Trials:** Animal testing to evaluate safety and potential efficacy.
2. **Phase I Clinical Trials:** Small-scale trials to assess safety in humans.
3. **Phase II Clinical Trials:** Larger trials to evaluate immunogenicity, safety, and dosing.
4. **Phase III Clinical Trials:** Large-scale trials to assess the vaccine's efficacy in preventing COVID-19 and continue safety monitoring.
5. **Emergency Use Authorization (EUA):** Given by regulatory bodies (such as the FDA) when data suggest the vaccine's benefits outweigh the risks in a public health emergency.
6. **Post-marketing Surveillance (Phase IV):**

Ongoing studies to monitor vaccine safety and effectiveness in the general population.

Side Effects and Safety: The majority of side effects have been mild, such as pain at the injection site, fatigue, and headaches. Rare adverse events, such as myocarditis (inflammation of the heart) and blood clotting disorders, have been reported but remain far outweighed by the benefits of vaccination.

3. DEFINITION AND TYPES OF VACCINES IN COVID-19

COVID-19, short for "Coronavirus Disease 2019," is a highly infectious respiratory illness caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). First identified in Wuhan, China, in December 2019, it rapidly spread across the globe, leading to the World Health Organization (WHO) declaring it a pandemic in March 2020.

COVID-19 primarily spreads through respiratory droplets when an infected person coughs, sneezes, or talks, though it can also spread via contaminated surfaces. The symptoms of COVID-19 range from mild (fever, cough, fatigue) to severe (difficulty breathing, loss of taste or smell), and can lead to critical conditions like pneumonia, multi-organ failure, and death, particularly in vulnerable populations such as the elderly and those with pre-existing health conditions.

The pandemic had wide-reaching effects, impacting global healthcare systems, economies, and daily life. Extensive measures, such as social distancing, mask-wearing, quarantines, and lockdowns, were implemented to curb the virus's spread. Vaccination efforts began in late 2020, offering an essential tool to control and reduce the severity of COVID-19 infections.

list of the main types of COVID-19 vaccines:

1. mRNA Vaccines
2. Viral Vector Vaccines
3. Protein Subunit Vaccines
4. Inactivated or Attenuated Virus Vaccines

list of the main types (variants) of COVID-19 that have been identified during the pandemic:

1. Original SARS-CoV-2 (Wuhan Strain)
2. Alpha (B.1.1.7) - First detected in the UK
3. Beta (B.1.351) - First detected in South Africa
4. Gamma (P.1) - First detected in Brazil
5. Delta (B.1.617.2) - First detected in India
6. Omicron (B.1.1.529) - First detected in South Africa
 - o Subvariants include BA.1, BA.2, BA.4, BA.5, XBB, and others.

AND INJECTED VACCINE FOR MOSTLY PEOPLES IN COVID -19

It is administered in two doses, typically spaced four weeks apart.



FIG.NO.3.1

3.2 SPUTNIK V

It refers to several vaccines, most notably the **Sputnik V** COVID-19 vaccine, developed by the **Gamaleya Research Institute** in Russia. The name "Sputnik" is also symbolic, as it refers to the Soviet Union's Sputnik satellite, the first artificial Earth satellite, launched in 1957, signaling a groundbreaking achievement.

It is a **viral vector** vaccine. This means it uses a modified virus (not the coronavirus itself) to deliver genetic material from the COVID-19 virus into human cells, which then triggers an immune response.

The vaccine is administered in two doses, usually spaced 21 days apart.



FIG.NO.3.3

3.1 COVAXIN

it is an inactivated virus-based COVID-19 vaccine developed by Bharat Biotech, an Indian biotechnology company, in collaboration with the Indian Council of Medical Research (ICMR) and the National Institute of Virology (NIV). It was one of the first vaccines to be approved and used in India to combat the COVID-19 pandemic.

3.3 COVI SHIELD

- **Covishield** is the name of a COVID-19 vaccine developed by **AstraZeneca** and the **University of Oxford**. It is manufactured and distributed in India by the **Serum Institute of India (SII)**. Here's a brief overview It is one of the most widely distributed vaccines due to its easier storage requirements (between 2°C and 8°C, which is common refrigeration temperature).



FIG.NO.3.2

Side Effects:

Common side effects include:

- Pain at the injection site
- Fatigue
- Headache
- Fever
- Muscle or joint pain

3.4 PFIZER-BIONTECH

- It refers to the COVID-19 vaccine developed jointly by **Pfizer**, an American pharmaceutical company, and **BioNTech**, a

German biotechnology firm. It was one of the first vaccines to be authorized for emergency use and has been widely distributed globally. Here's a brief overview. Initially, it needed to be stored at **-70°C (-94°F)**, making logistics more difficult in some areas.



FIG.NO.3.4

5. Side Effects:

- Pain at the injection site
- Fatigue
- Headache
- Muscle or joint pain
- Fever
- Chills

3.5 SINOPHARM

It is a COVID-19 vaccine developed by **China National Pharmaceutical Group** (Sinopharm), specifically by its **China National Biotech Group (CNBG)** subsidiary. It is one of the first vaccines developed in China and has been widely used globally, particularly in many low- and middle-income countries. **Storage:**

Sinopharm can be stored at standard refrigerator temperatures, between **2°C and 8°C**.



FIG.NO.3.5

Side Effects:

Common side effects include:

- Pain at the injection site
- Fatigue
- Headache
- Muscle pain
- Fever

Materials and Methods: It was an online survey a survey link was circulated using the Whatsapp. The survey questionnaire included perceived stress scale, Patient Health Questionnaire, Generalized Anxiety Disorder-7, Warwick-Edinburgh Mental Well-being Scale to assess perceived stress, anxiety, depression, and mental well-being, etc..respectively. The survey link was circulated starting from September to October.2024

4.METHODOLOGY

The Survey Objectives

- **Purpose:** Clearly identify the objectives of the survey. For example, are you trying to assess vaccine acceptance, hesitancy, knowledge

Target Population

- will target. This could include:
 - General public (adults of all ages).
 - Specific demographics (age groups, health workers, ethnic minorities, etc.)
- **the Population:** Identify the group that the

survey

Survey Instrument Design (Questionnaire)

- **Question Type:** Use a mix of closed-ended (multiple choice, Likert scale) and open-ended questions.
- **Relevant Topics:** Ensure the questions cover:
 - Awareness of COVID-19 vaccines.
 - Trust in vaccine efficacy and safety.
 - Sources of information on vaccines.
 - Barriers to vaccination (cost, accessibility, misinformation, etc.).
 - Vaccine uptake or intention to vaccinate.
- **Clarity and Simplicity:** Ensure that the language of the questionnaire is simple and understandable for all respondents.

Mode of Data Collection

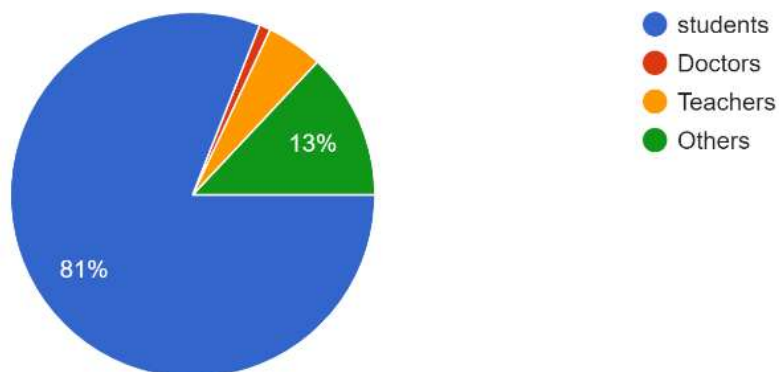
- **Online Surveys:** Commonly used to reach large populations during COVID-19 restrictions. Tools like Google Forms, SurveyMonkey, or specialized platforms may be used.
- **Telephone Surveys:** Can be used to reach those without internet access.

Reporting Results

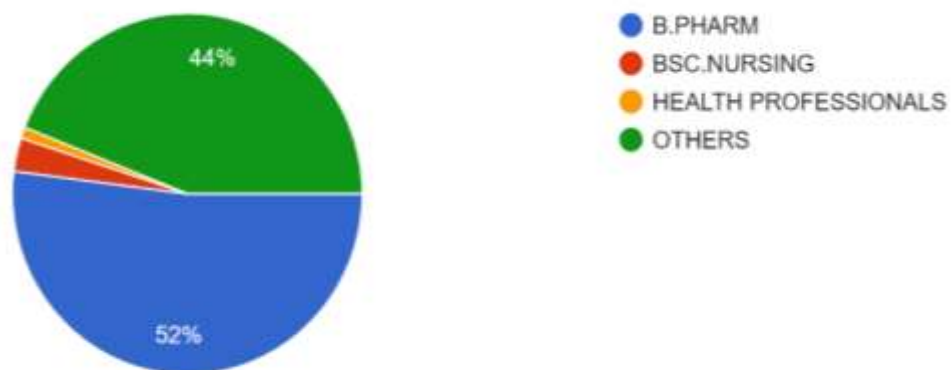
- **Graphs and Charts:** Use visual aids (pie charts, bar graphs) to represent data clearly.
- Excel to analyze quantitative data (e.g., percentages of vaccine acceptance, vaccine hesitancy rates).

5.RESULTS AND DISCUSSION

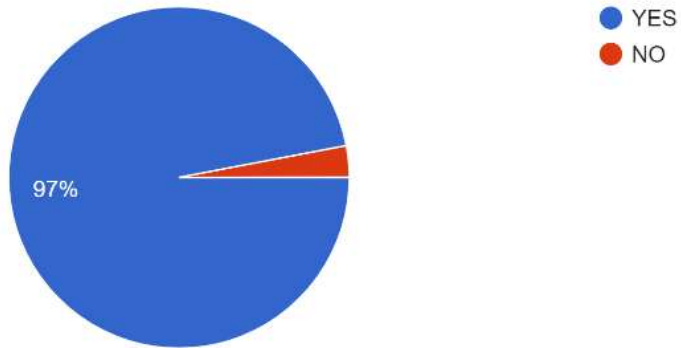
1) Profession



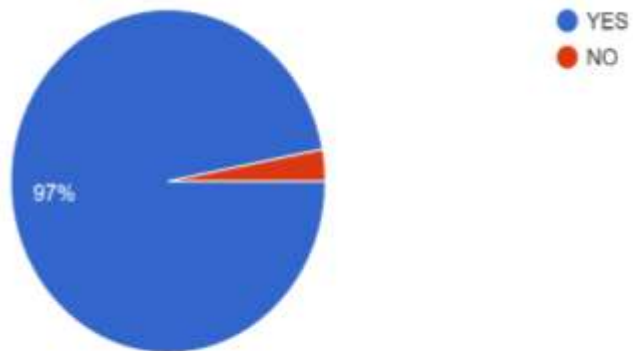
2)Which course you study?



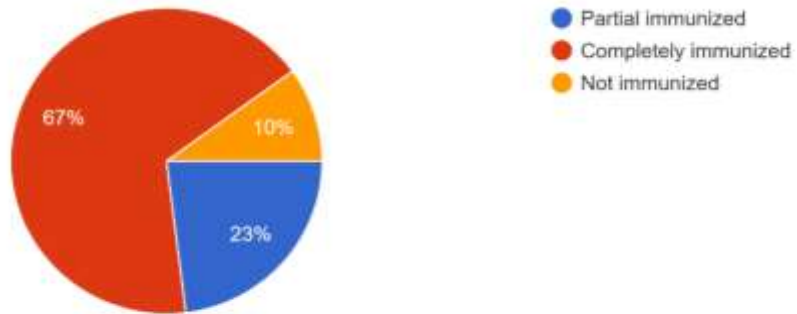
3) Did you put vaccination?



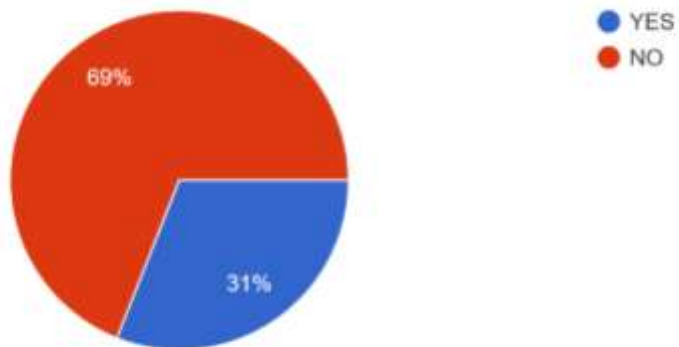
4) Which type of vaccination have you injected?



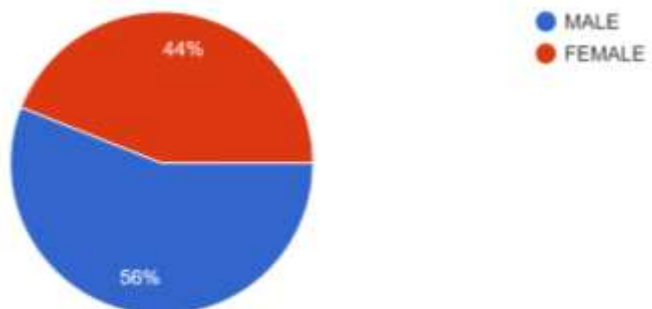
5) Vaccination status?



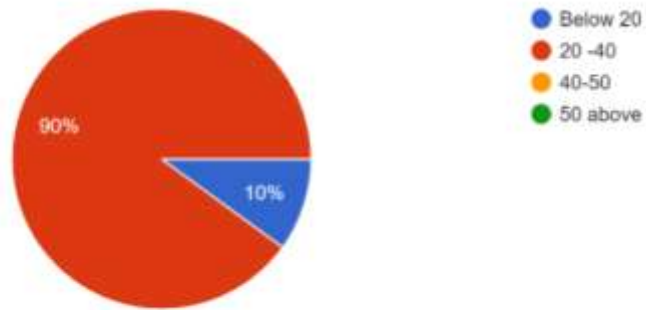
6) Whether you are involved in direct patient care?



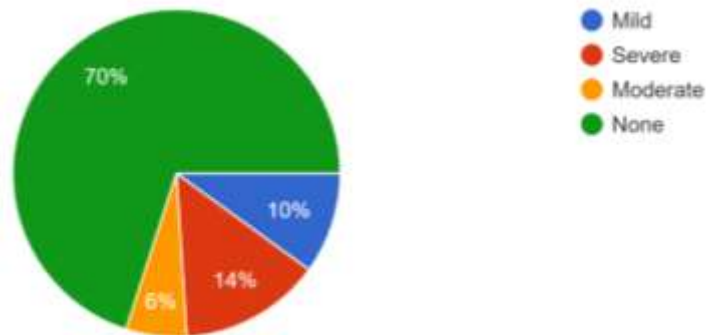
7) Gender



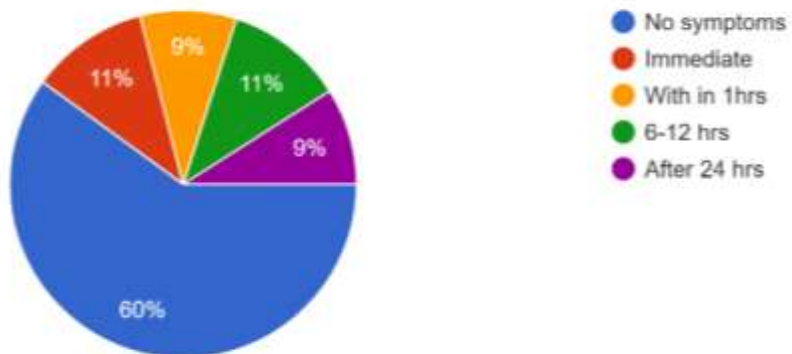
8) Age groups



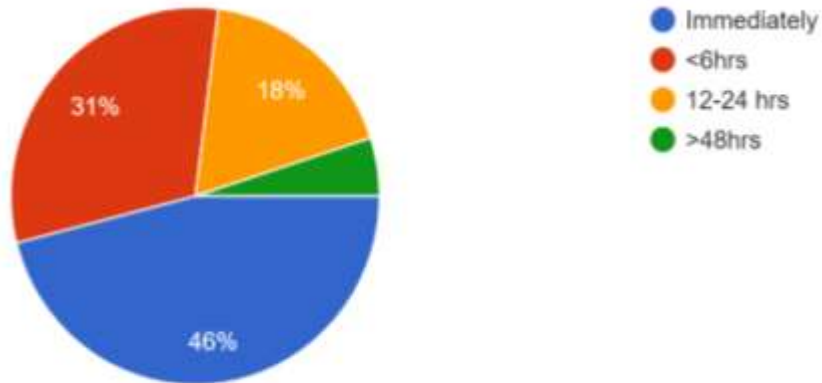
9) Covid -19 disease



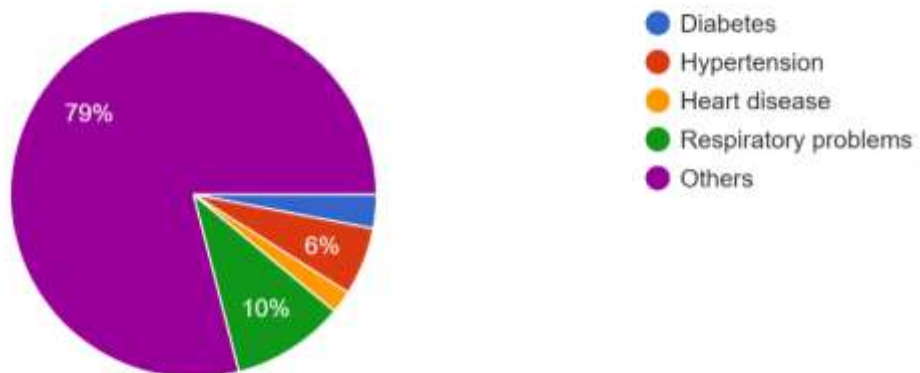
10) Time of occurrence of post vaccination symptoms?



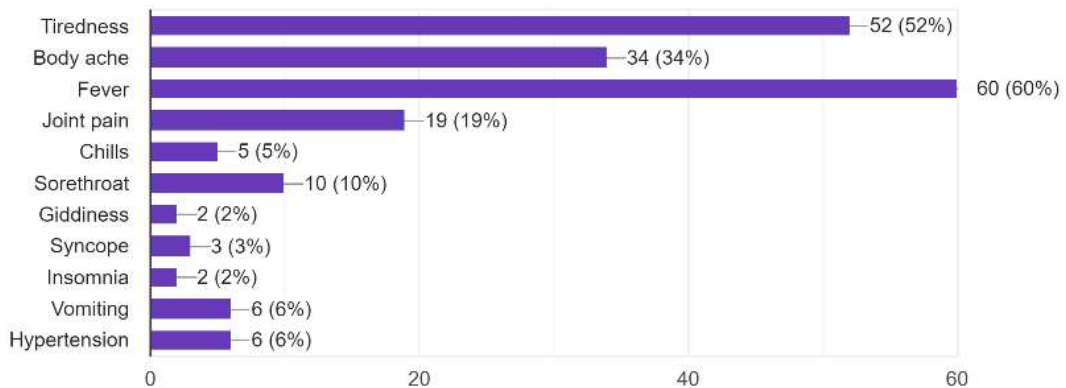
11) Time to resume work?



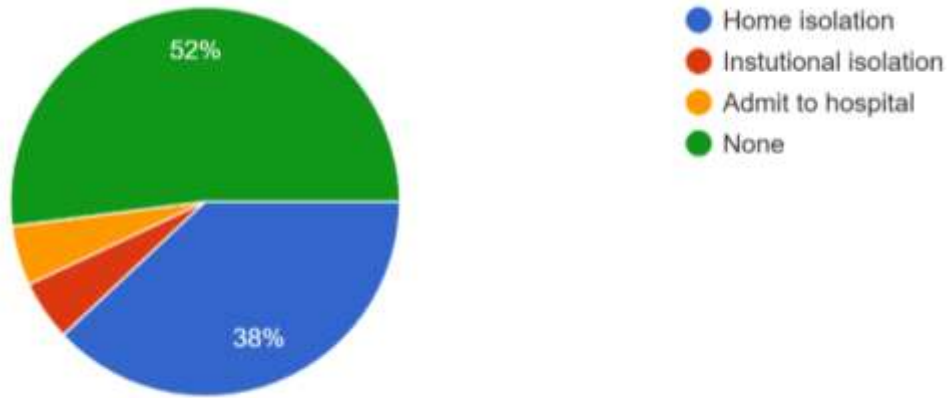
12) Associated Co -morbidity conditions?



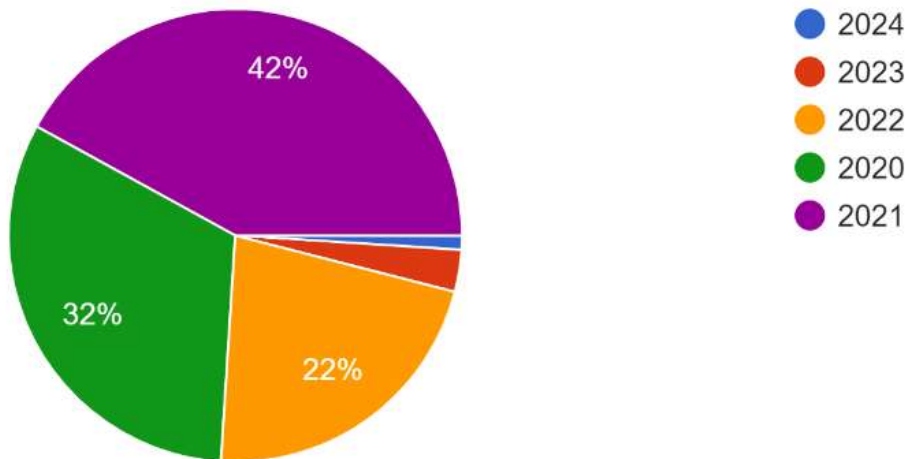
13) Post vaccination symptoms?



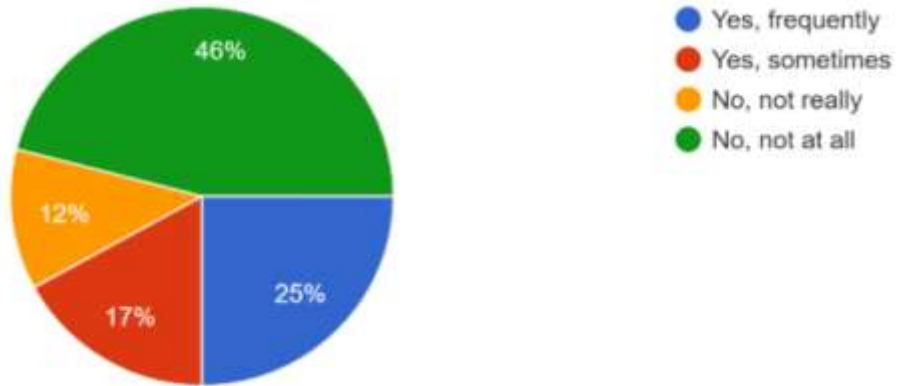
14) Type of isolation opted?



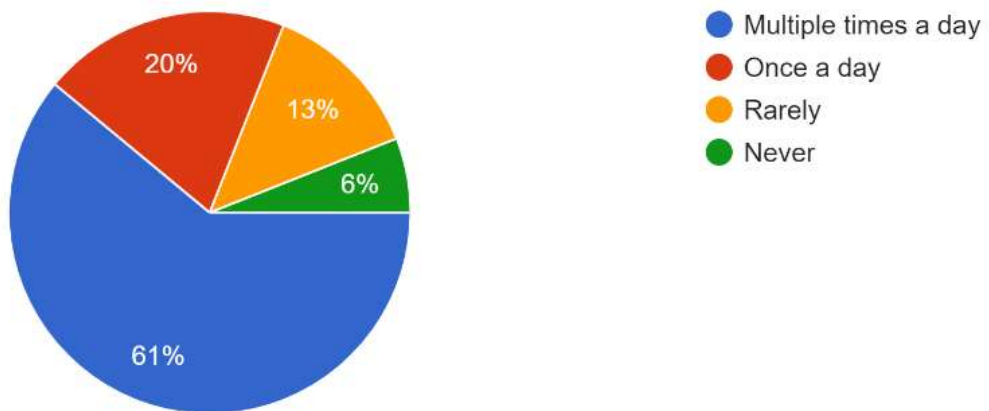
15) Are you vaccinated in year?



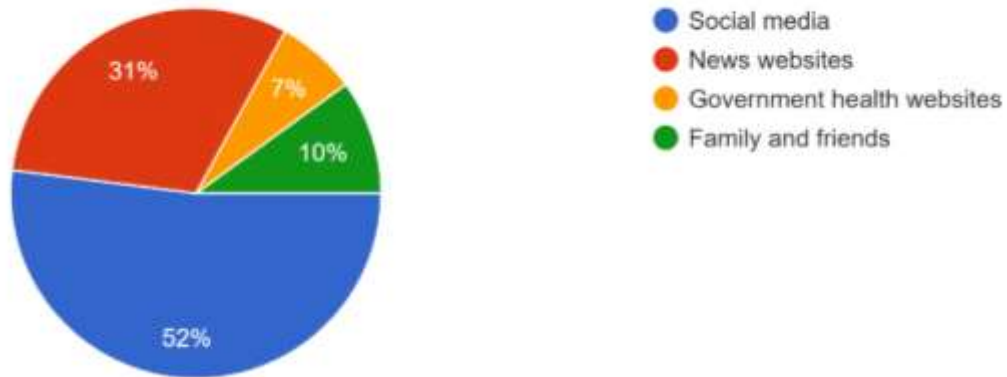
16) Have you experienced increased anxiety due to COVID-19?



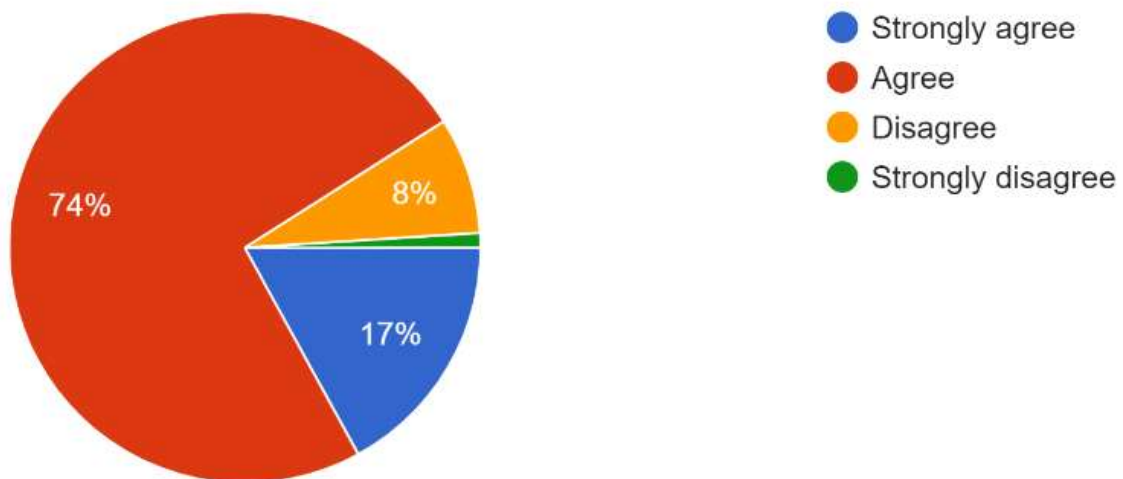
17) How often do you sanitize your hands to prevent COVID-19?



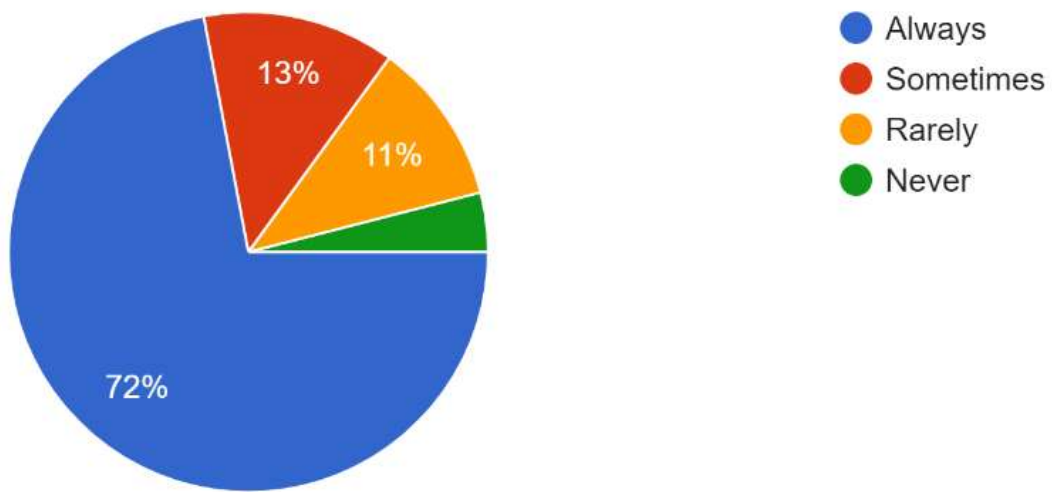
18) Where do you primarily get information about COVID-19?



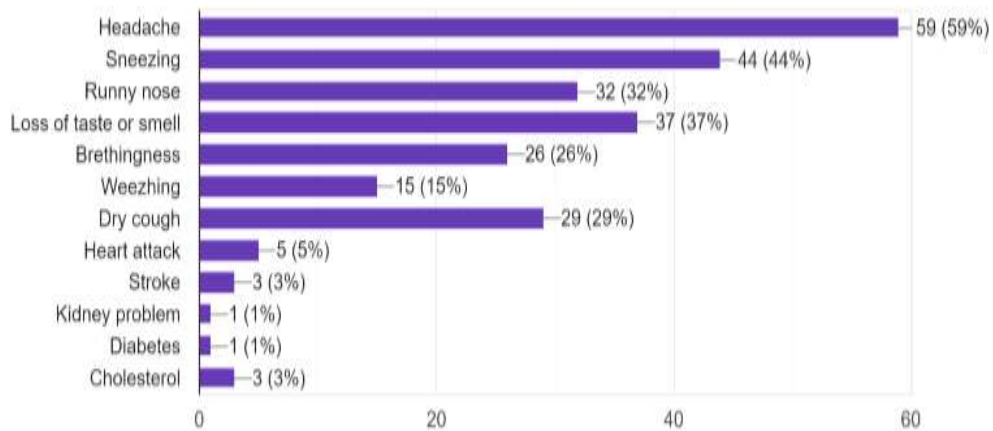
19) Do you believe COVID-19 vaccines are effective in preventing infection?



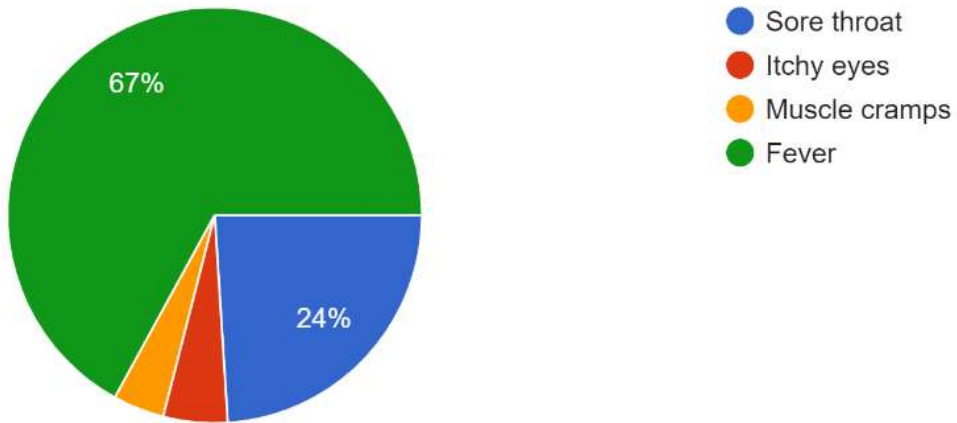
20) Have you been wearing a mask in public places to prevent the spread of COVID-19?



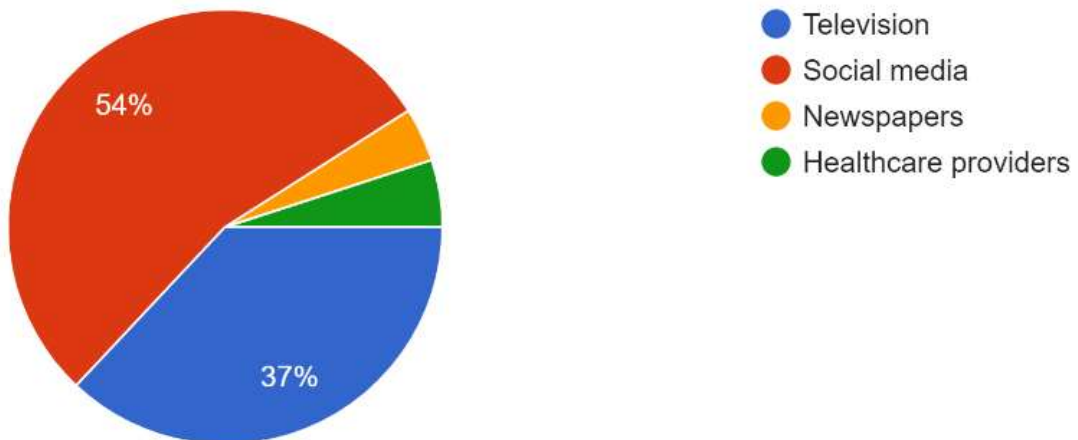
21) Which of the following is a common symptom of COVID-19?



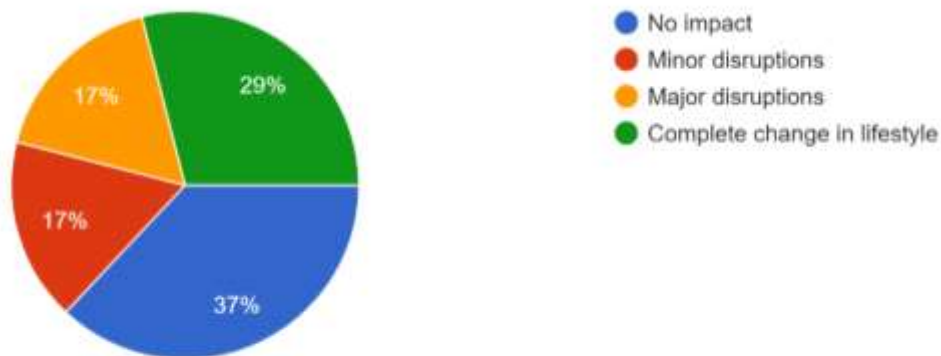
22) Which of the following is a symptom commonly associated with COVID-19?



23) Where do you primarily get information about COVID-19?



25) How has COVID-19 impacted your daily routine?



6.REPORT

In a recent COVID-19 vaccination survey conducted among 100 participants, 96.2% reported having received the vaccine. This high vaccination rate reflects widespread public acceptance of the vaccines as an effective measure against COVID-19. The results indicate strong compliance with public health recommendations, contributing to efforts in controlling the virus's spread and reducing severe outcomes. However, further engagement is necessary to understand the reasons behind the 3.8% who remain unvaccinated, to address concerns, and to promote full community protection.

6.1 Reported Symptoms and Conditions

- **Headache:** The most commonly reported symptom, experienced by 59% of individuals.
- **Sneezing:** Reported by 44% of participants.
- **Runny Nose:** A symptom experienced by 32% of respondents.
- **Loss of Taste or Smell:** Reported by 37% of the surveyed population.
- **Breathlessness:** Noted by 26% of individuals.
- **Wheezing:** Reported by 15% of participants.
- **Dry Cough:** Experienced by 29% of individuals.
- **Heart Attack:** A more severe condition,

reported by 5%.

- **Stroke:** Occurred in 3% of the surveyed group.
- **Kidney Problems, Diabetes, and High Cholesterol:** Each of these conditions was reported by 1-3% of individuals.

This breakdown shows a range of common symptoms primarily affecting the respiratory system, with some individuals also reporting severe conditions like heart attacks and strokes. This data is useful for understanding the broader impact of the illness on both mild and severe health outcomes.

7.CONCLUSION

The results of the updated COVID-19 survey provide a valuable snapshot of current public opinion, health practices, and societal impacts. Despite the significant progress in vaccination efforts, the findings highlight ongoing concerns about virus variants, mental health challenges, and economic recovery. A majority of respondents have expressed the need for continued health precautions, indicating that while daily life is gradually normalizing, uncertainty remains.

The data reveals that many individuals have adapted to the new normal by integrating both digital and in-person activities into their lives, yet the psychological impact of prolonged isolation and economic

instability continues to be a challenge for many. There is also notable support for government and institutional transparency in managing future public health crises.

Going forward, it will be crucial to address the public's concerns about long-term economic stability and mental health support while ensuring access to credible information about emerging health threats. Continued monitoring and adaptation of policies will be essential as we navigate the evolving landscape of the pandemic and post-pandemic recovery.

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