HIGH SCHOOL EDITION
Journal of Student Research
Volume 11 Issue 4 (2022)

The Most Significant Factor Responsible for COVID-19 Vaccine Hesitancy in England

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ABSTRACT

Objectives: This research aims to evaluate the factors responsible for the acceptability and hesitancy of the COVID-19 vaccine in England by evaluating the public's willingness to get the vaccinations. This is cross-sectional population-based research where data were collected through a structured online survey.

Methods: From December 2021 to February 2022, a cross-sectional survey including English residents was carried out utilizing a structured online questionnaire. Participants' demographics and opinions on COVID-19 and the COVID-19 vaccination were surveyed.

Results: There were 320 participants, of which 286 people (89.7%) were from West Midlands region of England. 296 (92.5%) had received at least one dose of the COVID-19 vaccination with 127 of them (43%) having taken at least 2 doses of the COVID 19 vaccine. 24 people (7.5%) had not yet taken the COVID-19 vaccine. 17.9% (53 people) of the 296 indicated that they were hesitant at first before taking the vaccination whilst 82.1%(243 people) said they had confidence in the COVID-19 vaccination. The main reason given by 208 people (70.1%) for taking the vaccine was to protect others and themselves. Altogether 75 out of 320 people (23.4%) felt hesitant about taking the COVID-19 Vaccine. The most indicated reason for this by 47 people (62.7%) was a lack of trust in the safety and effectiveness of the vaccines. 193 respondents (79.8%) indicated they were happy with their decision.

Conclusion: The COVID-19 vaccine has been administered to a significant majority of the study participants. However, this study has shown that lack of trust in the safety and effectiveness of the vaccines is the most indicated reason for COVID-19 vaccine hesitancy and therefore further awareness-raising actions may still be needed from the government, public health professionals, and advocacy organizations in order to persuade more people to adopt the COVID-19 vaccination.

Introduction

The coronavirus disease (also known as COVID-19) is an infectious illness caused by the SARS-CoV-2 virus [1]. The virus was first discovered on the 31st December 2019 during a pneumonia outbreak in Wuhan, Hubei Province, China, as a novel coronavirus. The outbreak was then proclaimed a worldwide health emergency on the 30th January 2020 by The World Health Organisation (WHO), which later declared COVID-19 to be categorized as a pandemic disease on March 11 2020 due to the startling levels of spread and severity, as well as the alarming levels of inaction across and amongst countries [3]. There is an increased chance of this serious illness developing in the elderly and those with underlying medical disorders and conditions such as chronic respiratory disease, cardiovascular disease, diabetes, or cancer. But overall, COVID-19 can infect and make anyone sick and, as a result, cause them to get very ill or die at any age [2].

Vaccination can be defined as an ‘intentional introduction of a virus or its component to elicit an immune response and this can be injection, oral or nasal routes [4]. They are one of the most cost-effective

strategies in preventing disease, and they presently prevent 2-3 million deaths each year, with another 1.5 million deaths which could be potentially prevented if global vaccination coverage improved [5]. On the other hand, despite being given and provided with information that includes all these benefits and more of immunization, for as long as vaccines have existed, they have been regarded with distrust and resistance. This hesitancy has been motivated by several recurring and intersecting themes both internationally and historically.

According to the WHO, vaccine hesitancy can be defined as 'the reluctance or refusal to vaccinate despite the availability of vaccine [5]. It exists on a spectrum, with people becoming wary for several reasons between complete acceptance and complete refusal. Individuals who are vaccine reluctant may accept all vaccines but remain concerned about them; others may refuse or delay some vaccines but accept others, and yet others may refuse all vaccines. This apprehension may stem from both sensible and irrational factors. It varies across time; place, and the type of vaccines being administered. However, vaccine hesitancy should not be confused with 'anti-vax' feelings, which are expressed by persons who oppose vaccinations because they do not believe the COVID-19 virus exists. The WHO believes that vaccine hesitancy threatens to undo advances gained in the fight against vaccine-preventable diseases. Therefore, it recognised it as one of the top 10 global hazards in 2019 [5].

Vaccine hesitancy is the result of a complicated decision-making process, influenced by a wide variety of factors that derive from:-

- contextual influences:- where environmental, health system/institutional, historical, political, socio-cultural, or economic factors influence vaccine hesitancy [6];
- individual and group influences:- where influences of the social/peer environment or personal perception of the vaccine influence vaccine hesitancy [6];
- vaccine/vaccination – specific issues:- where there are certain concerns directly associated with the covid-19 vaccine or vaccination [6].

The goals of this research were to determine the willingness of adults in England to take the COVID-19 vaccination and to determine what attitudes about the disease are related to individuals' acceptance or rejection of the vaccine. It also aimed to determine the incidence of hesitancy to COVID-19 vaccination in England.

Methodology

Study Design and Data Collection

A confidential online survey was used to create this cross-sectional research. Targeted advertising on social media sites including Facebook, Instagram, WhatsApp, and Outlook was used to recruit responses. Additionally, to increase the number of respondents, our social media networks were invited to share the online survey with their networks. Data were gathered using Google Forms. To be eligible for the online survey, a person had to be an English citizen or resident, read and comprehend English, and have access to the internet. The questionnaire was made to be brief, clear, and understandable. An impartial reviewer conducted a pre-test to examine readability, comprehensibility, and validity before the questionnaires was utilised.

Analytical Measures

A structured questionnaire was developed in the English language to collect data. This questionnaire comprised 8 questions under three main themes, as follows: (1) demographics; (2) COVID-19 vaccination status; (3) attitudes and willingness toward the COVID-19 vaccine. Demographic such as region of residence was collected. The respondent vaccination status was assessed using two-item questions: (i) "Have you had a COVID-19 Vaccine?—with a Yes or No options, and (ii) "How many doses of the COVID-19 vaccine have you had?"—

with 1,2 or 3 options. Among the variables assessed were the attitudes and willingness of respondents toward a COVID-19 vaccine. To be more specific, participants were asked: (i) "Were you hesitant at first in taking a COVID-19 vaccine?"; (ii) "What are the main reasons for why you had a COVID-19 vaccine?"; (iii) "How happy are you with your decision?"; (iv) "What are the main reasons for why you are/were hesitant in having the COVID-19 Vaccines?"; (v) "How happy are you with your decision?" (See appendix 1)

Result

From the study with total number of respondents, 320 89.7% (286 people) of the responses were from West Midlands region of England. 92.5% (296 people) who had taken the survey had received at least one dose of the COVID-19 vaccine (figure 1). Additionally, out of that 92.5% of all respondents, 43.1% (127 people) had taken at least 2 doses of the COVID 19 vaccine (figure 2). 82.1% (243 people) indicated that they were vaccine confident with regards to the COVID-19 vaccine (figure 3). The main reason given for this by 86% (208 people) was to protect others and themselves.

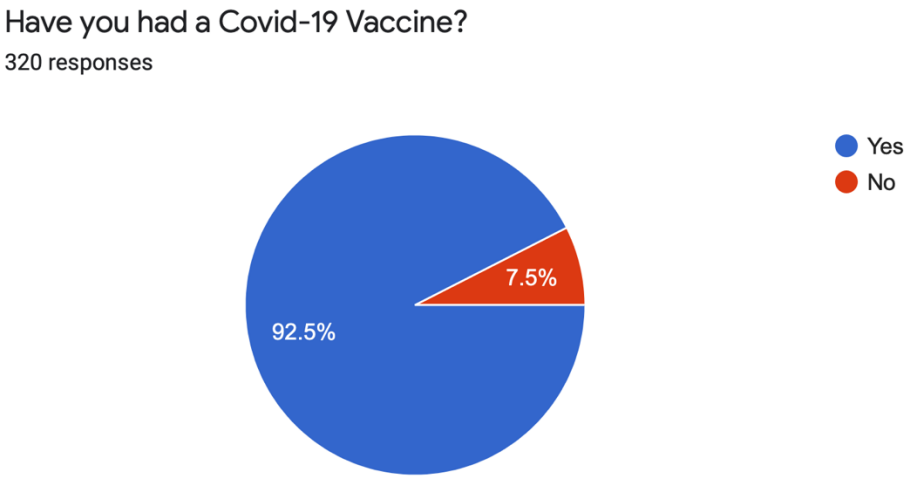

Figure 1. Rate of COVID-19 intake.

79.8% (193 people) indicated that they were happy with their decision. 32,8% (29 people) were undecided about feeling happy or unhappy about their decision. Out of those who received at least one dose of the vaccine, 17.9% (53 people) were initially hesitant to receive it. 7.5% (24 people) had not yet taken the COVID-19 vaccine. 75 out of 320 people (23.4%) felt hesitant about being immunized with the COVID-19 Vaccine. The most indicated reason for this by 62.7% (47 people) was because of a lack of trust in the safety and effectiveness of the vaccines. Other reasons were lack of trust in the Government, heard unpleasant information about the vaccines from social media, and lack of knowledge or understanding of the vaccines.

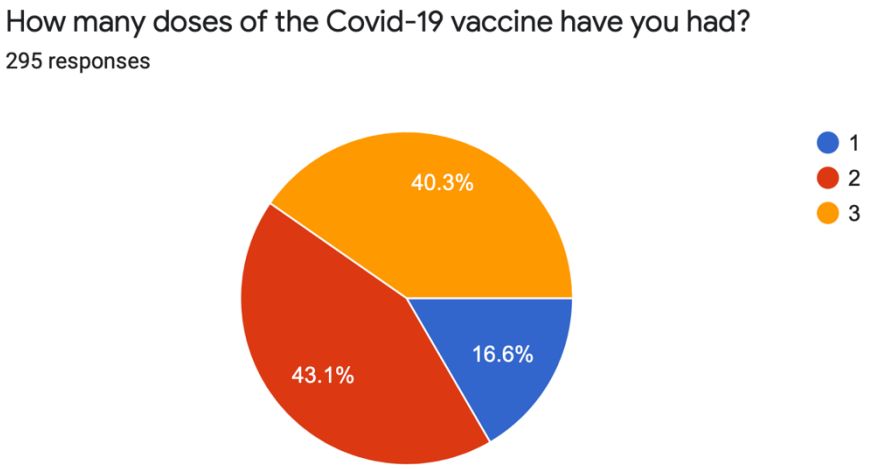

Figure 2. Rate of full COVID-19 vaccination status.

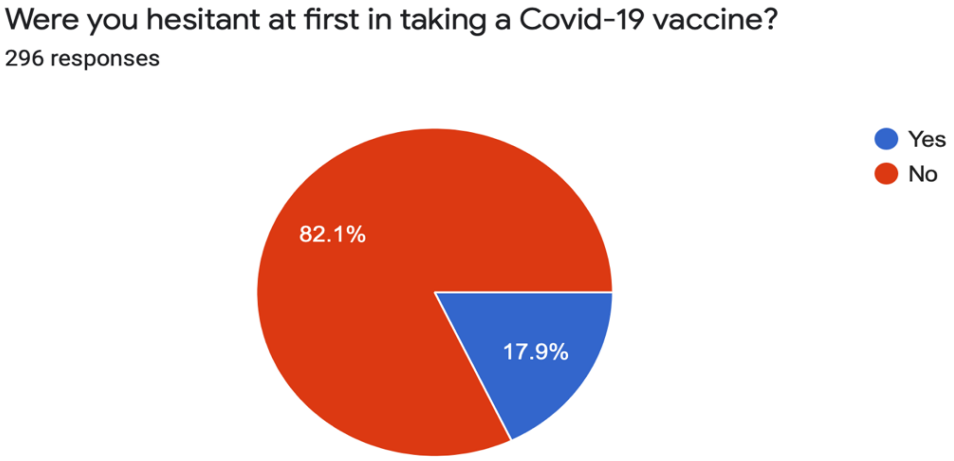

Figure 3. Rate of confidence toward COVID-19 vaccine among those who took at least one dose of the vaccine.

Discussion

The present COVID-19 immunization campaign's success, like that of any other vaccine program, hinges on how well the people receive it. Lack of herd immunity and exposure of the most susceptible population is closely correlated with poor vaccination coverage rates brought on by non-acceptance. Therefore, it is essential to comprehend the public's reasons for adopting the COVID-19 vaccination, allowing enough time to plan and execute focused public health initiatives and awareness campaigns and public education on the value of vaccination. The following factors are some of the main reasons for COVID-19 vaccine hesitancy:

Inability to Access a Vaccine

A population may have overall trust in a vaccine and health service and be motivated to receive one, but they may be hesitant to do so because the nearest health centre is either too far away or access is problematic.

Lack of Trust in The Government

Government or authority scepticism can influence belief in vaccines and immunization programs run by or imposed by the government. There are many reasons why there is distrust towards the government that can lead people not to trust the administration of a vaccine. This can be due the belief that government only make decisions that benefit the authorities rather than the population, or the belief in false conspiracy theories, such as how the COVID-19 vaccines contain microchips to track citizens – the latter, in particular, symbolizes fear of vaccine components as well as vaccinations as a surveillance tool. In addition, system procedures that were excessively long or complex, or previous adverse personal encounters, are all examples of past experiences that impact hesitation.

Lack of Trust in Healthcare Organizations Due to Historical Influences

Systemic racism and prior under-representation of minorities in health research and vaccine trials are likely to blame for the lack of belief in vaccines, especially among Black people. This can lead to doubts about a vaccine's suitability and safety, as well as concern about its efficacy. This is the result of unethical medical experiments that were conducted amongst the Black populations in the past. A prime example of this was when James Marion Sims, known as the "Father of Modern Gynaecology," utilized slaves as medical guinea pigs in the mid-nineteenth century in the United States, performing surgery on them without anaesthesia. So a major concern amongst the Black community is the fear of being utilized as "guinea pigs" once again [6].
In addition, black people are wary when it comes to taking vaccines because there is alarming data available as proof of health disparities. According to stark official numbers revealing a substantial divergence in the impact of the coronavirus pandemic in England and Wales, black people are more than three times more likely to die from COVID-19 than white people [7]. Many of them have come to believe that discrimination played a major role in this, and so criticize the healthcare organizations and the government for failing to fully explore why their communities were disproportionately affected, whilst many Black families mourn the loss of loved ones [7].

Heard Unpleasant Information About the Vaccines On Social Media

In the situation where scarce information is being provided to the public by the government or health organizations, it is highly likely that people will look for alternative sources of information from social media, like Facebook and Twitter. The media is a popular way of accessing information and opinions shared by other people, advertisers, activist groups, politicians, and news media and a lot of the time it is misinformation. This type of information can then spread and deceive many amongst the masses. Fake news found on the media that discourages the acceptance of the COVID-19 vaccine, for example, can mislead people, who had discovered this information, into not taking the vaccine [8].

Religious and Cultural Factors

According to one study, religious teachings prioritise prayers more than medicine, resulting in vaccine hesitation among devotees. This, combined with a lack of proper information on the available vaccines, leads believers to adopt alternative means to the treatment of COVID-19, such as the use of holy water and prayers, out of

concern that vaccination will result in the death of their children. Also, vaccines containing pork compounds or that are not halal are prohibited in some religious beliefs, such as Islam, causing concerns and hesitancy towards such vaccines available in England, which has yet to make an official remark on whether their goods include pork-derived gelatin, for example [9].

Furthermore, Buddhists may be opposed to vaccines like the Johnson & Johnson vaccine because cells created in a laboratory from aborted foetal cells, collected decades ago, were used in testing during the mRNA vaccines' research, development and manufacturing. If vaccination is generated from any living thing, it is problematic whether it can be used, according to Buddhism's core teaching of "not taking life" - the first of five Buddhist precepts. Any action that could result in the extinction of any potential life is forbidden in Buddhism [10].

Finally, Orthodox Protestant parents who oppose vaccination for religious reasons say that vaccination is an act of interference with divine providence - "under God's sovereign guidance and care." Those who vaccinated their children saw the vaccine's side effects as divine proof that they made the wrong choice [10,11].

With regards to cultural influences, some cultures value boys over girls and so may not be so encouraging in girls receiving the COVID-19 vaccine. And in other cultures, fathers do not allow children to be vaccinated [12].

Influence from Friends/Family Hesitancy

Friends and family can have a big impact on vaccine acceptance or hesitation. Due to the close relationships and built trust between an individual and their family or friends, the individual is most likely to believe them if they spread misinformation or force fears amongst other friends or family members. This can cause some people to refrain from vaccinating to protect their relationships and as an act of loyalty to their friends and family.

Inability to Have the Vaccine Due to Allergies or Health Conditions

Anyone who has ever had an adverse reaction to an excipient in the COVID-19 vaccine such as polyethylene glycol should avoid it (except with expert advice). Polyethylene glycol is used in the Pfizer BioNTech and Moderna mRNA vaccines (PEG). PEGs (also known as macrogols) are a class of allergens that can be found in a wide range of products, including pharmaceuticals, home goods, and cosmetics. Some pills, laxatives, depot steroid injections, and bowel preparations used for colonoscopy include PEG. However, a PEG allergy is extremely uncommon. According to new evidence, only a small percentage of allergic reactions observed after COVID-19 immunizations are now linked to PEG allergy [13].

Lack of Knowledge and Understanding of the Vaccine

A lot of the factors discussed here influence whether or not people are willing to get vaccinated and included in this also is their level of education and awareness. Whether an individual or a community has the proper knowledge, lacking in awareness owing to a lack of information, or has misperceptions due to misinformation, can all influence vaccine acceptance or hesitancy. Even accurate understanding alone may not be enough to secure vaccination acceptance because misperceptions can generate apprehension. As well as this, those who spoke English as a second language may find the vaccine's messaging unclear or inaccessible, making them more inclined to skip immunization. Similarly, some people born outside of the UK but now live in the UK may become conflicted due to the disparities in vaccine policy and perceptions between their two countries.

The Belief That Vaccines Can Have Negative Effects On an Unborn Baby

Pregnant women may be reluctant to receive the COVID-19 vaccine because of a lack of long-term information regarding the vaccine's risks to their child, coupled with healthcare professionals' ambiguous safety messages and misinformation spreading on social media.

Waiting On Recovery

Although prolonged COVID-19 symptoms are not a contraindication to receiving the COVID-19 vaccine, deferral of vaccination may be considered if the patient is seriously debilitated, still under active investigation, or has evidence of recent deterioration in order to avoid incorrect attribution of any change in the person's underlying condition to the vaccine. As well as this, individuals who have been diagnosed with COVID-19 should not attend vaccination programs to avoid infecting others. Instead, they should stay at home and isolate themselves in order to decrease the number of people with whom they come into contact.

Fear of Needles

Vaccine reluctance might be influenced by the method of administration for a variety of reasons. Oral or nasal administrations, for example, are more convenient and may be accepted by persons who are afraid of injections. According to a recent Oxford University poll involving over 15,000 persons in the United Kingdom, needle phobia contributes to roughly 10% of COVID vaccination apprehension as they were only administered through injection into the muscle at the top of the upper arm (deltoid muscle) [14]. As well as this, people that lack confidence in the skills or instruments employed by health care providers may be hesitant to becoming vaccinated.

Adverse Event Following Immunisation (Aefi)

An AEFI is a negative or unanticipated health impact that occurs after a vaccination, which may or may not is caused by the vaccine. People who know someone who had an AEFI may cause become hesitant to immunization as they may believe the vaccine is not safe and effective enough to prevent a situation like that from happening to them. In this study, 92.5% who had taken the survey had received at least one dose of the COVID-19 vaccine. This is very encouraging. 82.1% indicated that they were vaccine confident with regards to the COVID-19 vaccine. The main reason given for this by 86% of those who have received the vaccine was to protect others and themselves. 23.4% were hesitant about being immunized with the COVID-19 Vaccine. The most indicated reason by 62.7% of those who were hesitant to take the vaccine was because of a lack of trust in the safety and effectiveness of the vaccines. One limitation of this study, however, is that 89.7% (286 people) of the responses were from the West Midlands region of England - mainly from areas such as Birmingham, Coventry, Hereford, Shrewsbury, Stafford, Stoke-on-Trent, Telford, Wolverhampton, and Worcester - and therefore not evenly distributed throughout England. This, however, was not surprising as a lot of the responses were from staff and pupils from Solihull School, which is located in the West Midlands, and their relatives. In spite of this, however, it succeeded in identifying the most significant factor responsible for COVID-19 vaccine hesitancy if not in England as a whole, at least in the West Midlands region of England and it is very likely that the same result will be applicable to all other regions of England.

Conclusion

Due to delays in obtaining funding, ethical approval, recruiting volunteers, negotiating with manufacturers, and scaling up production, vaccine development is typically a long and expensive process. However, the development of the COVID-19 vaccines had taken less than a year and so individuals may be hesitant to embrace a new vaccine if they believe it has not been used/tested extensively enough and the long-term effects have not been investigated. However, this boils down to a lack of awareness of the fact that the structure, genome, and life cycle of this type of virus, is already researched and known to scientists from previous researches into other pre-existing coronaviruses.

How people perceive risk is an important aspect of vaccine decision-making. People will be less willing to vaccinate if they believe vaccination poses a substantial risk. The human mind has evolved to be more concerned with losses more than with profits. So when it comes to risk assessment, people are more concerned with avoiding loss or damage than with gaining benefits. In the case of vaccination, avoiding the dangers connected with vaccines (however minor) may become more essential than getting the protection offered by the vaccine (however great it is).

Furthermore, people resort to the 'short-cut' of trust (or mistrust) in science and scientists and often, subconsciously, look to the attitudes and behaviours of others to judge what is normal and acceptable. Social interactions, media depictions, and cultural and political disputes all pick up on informal impressions of how science is valued or contested. Individual judgments of science's trustworthiness are shaped by a combination of these elements. Overall, science takes time, can provide a wide variety of results, and studies can have limits due to scope and technique, all of which leaves them prone to conspiracy theories and misrepresentations. The science-based policy is also susceptible to politicization, and many societies have a long-standing distrust of science as a result of previous misdeeds.

In this study we have been able to identify that although the uptake of the COVID-19 vaccination programme is very encouraging, there remains a significant percentage of the population in England who are vaccine hesitant and the most significant reason they have given for their hesitancy is lack of trust in the safety and effectiveness of the vaccines and therefore further awareness-raising actions may still be needed from the government, public health professionals and advocacy organizations, in order to persuade more people to adopt the COVID-19 vaccination.

Acknowledgments

I would like to thank my advisor for the valuable insight provided to me on this topic.

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