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Perception And Adherence To The COVID-19 Vaccination Programme Amongst Health Workers In A General Surgical Department: A Single Centre Experience

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ORIGINAL

Abstract

Background: Healthcare workers are often viewed as role models for health decisions so their perception of the COVID-19 vaccination programme is likely to have a significant impact on the general population. The aim of this study is to assess the knowledge and perceptions about the COVID-19 vaccine amongst health workers and the adherence to the same.

Methods: A cross-sectional study was carried out within the General Surgery Department at the William Harvey Hospital between April and May 2021. Questionnaires were electronically sent to all health workers, with a patient-facing role, within the General Surgical Department.

Results: 157 participants completed the questionnaire. 100% were aware of the COVID-19 vaccination. Methods by which staff heard about the COVID-19 vaccine included; scientific fora (38.1%); government sensitisation material (32.9%); word of mouth (23.2%); social media (15.5%) or 'Other' (16.1%).

Only 63.6% of the sample were able to correctly identify that the vaccine was an mRNA vaccine and 67.3% correctly identified that the vaccine offered between 51-100% protection.

82.7% of respondents had been vaccinated with 64.1% having received two doses. Reasons for remaining unvaccinated included; 'allergy' (37.0%); 'difficulty accessing' (25.9%); 'personal reasons' (11.1%) and 'uncertainty about side effects' (3.7%). 3 participants were unvaccinated due to other clinical contraindications. 63.5% agreed that the vaccine roll out had boosted their confidence in delivering patient care.

Conclusion: Overall, perception of and adherence to the COVID-19 vaccination programme is good. However, there were notable gaps in staff knowledge and addressing these via organisational education initiatives could help improve compliance amongst staff and in turn the wider community.

Keywords : COVID-19, Vaccine, adherence, key worker.

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Introduction

The COVID-19 pandemic has caused global disruption, unlike anything in recent history. At the time of writing, over 4,927,723 deaths have been recorded worldwide as a result of COVID-19 with more than 139,146 deaths in the UK alone (1). Whilst the impacts of the disease has been widespread across the population, healthcare workers have been particularly affected. A study

by Mutambudzi et al, reported rates of severe COVID-19 infection were seven times higher in healthcare workers compared to others (2).

Consequently, the NHS has struggled to cope with huge staff shortages at a time when there is immensely increased clinical demand. This has contributed to the longer waiting lists for elective surgical cases and outpatient clinic appointments (3; 4).

In late 2020, the world received news of several COVID-19 vaccines being ready for mass immunisation. However, as with every emerging science, and particularly given the rapid nature of their development, the debate quickly ensued about whether to take up the offer of a vaccine or not. Expectedly, this debate was not only amongst members of the public but also amongst health workers.

Healthcare workers were prioritised in the vaccination programme and three months into the vaccine rollout in the UK, 85% of health workers had received at least one dose of the vaccine, and 39% had received two doses (NHS England, 2021) (5).

Compliance to any vaccine is influenced by a number of factors including religious and socio-cultural reasons, understanding of scientific principles, knowledge of long-term efficacy, and awareness of risks and benefits (6).

This paper aims to analyse the number of staffs who have received the vaccines and how this has impacted the care they deliver to patients in a General Surgical Department in the South-East of the United Kingdom. We hope the results will help inform future planning and education surrounding vaccination programmes and improved adherence, particularly to future booster vaccinations, in these unprecedented times.

Methods

Study setting

This study was conducted in the Surgical Department of the William Harvey Hospital in Ashford, Kent. The department consists of about 200 clinical and non-clinical workers and serves a population of 80000 per year. The patient-facing staff includes surgeons and doctors of varying grades (such as Consultants, Registrars, Junior Doctors, Non-training grade Doctors), nurses, pharmacists, physiotherapists, nutritionists, ward administrative staff, and medical students.

Study design and sampling

A questionnaire was created by the authors to assess healthcare workers adherence, knowledge, and attitudes/beliefs regarding the COVID-19 vaccine and the impact of this on their practice. Currently, available literature and recommendations were used to inform the development of the questionnaire. Demographic data were also collected.

Data collection

The questionnaire was distributed electronically to staff within the department using a departmental mailing list. Responses were collected between April-May 2021. Responses from staff without a patient-facing role were excluded from the analysis. In the United Kingdom, healthcare workers were offered either the Pfizer-BioNTech vaccine or the Oxford Astrazeneca vaccine. From here on, 'the vaccine' or 'the COVID-19 vaccine' refers to both the Pfizer-BioNTech vaccine and the Oxford Astrazeneca vaccine.

Data Analysis

Data were analysed using SPSS 27.0 Software (IBM). Outputs were summarised using descriptive statistics. Normality testing was performed prior to average reporting and non-parametric de-

scriptive statistics were used where applicable. A p-value of <0.05 was assumed to be significant.

Results

A total of 170 questionnaires were sent to participants, and 157 respondents returned the completed questionnaire. The majority of the respondents, 70.3% were female. There was an even distribution of ages amongst the cohort; 54 respondents (34.4%) were between 21- 30 years of age; 51 (32.5%) between 31-40 years and 50 (31.8%) above 40 years of age. 2 participants were younger than 20 years of age.

154 participants listed their job roles, the distribution of roles is shown in Table 1.

Table 1. Distribution of job roles amongst respondents

Job Role	Number of Respondents (%)
Doctor - Consultant	2
Doctor - Registrar	17
Doctor - Senior House Officer	18
Doctor - Foundation Year 1/2	16
Nurse	52
Healthcare Assistant	24
Physiotherapist	2
Pharmacist	4
Medical Student	5
Other	14

Awareness of the vaccine

All 157 (100%) of participants were aware of the COVID-19 vaccination. The most common method by which staff heard about the vaccine was scientific fora (38.1%) followed closely by government sensitisation material (32.9%; Figure 1). Word of mouth (23.2%) and Social media (15.5%) were also important avenues by which staff learnt of the vaccine. 16.1% of staff listed 'Other' as the source of their information but did not specify. 27.1% of staff listed more than one method by which they had heard about the vaccine.

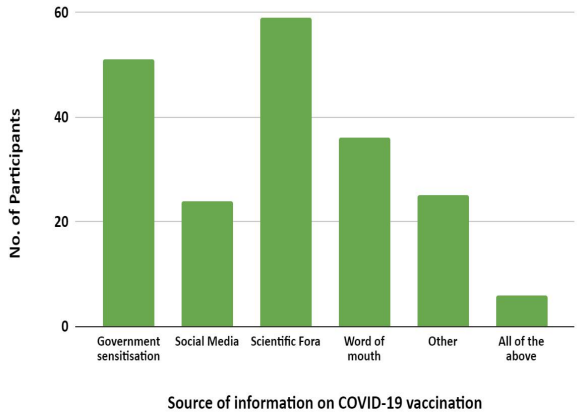

Figure 1. Bar chart demonstrating the number of participants who heard about the COVID-19 vaccination using the sources of information listed.

Knowledge of the vaccine

Only 63.6% of the sample were able to correctly identify what 'type' of vaccine they had received from a list of options which included 'conventional inactivated', 'RNA', 'viral vector', 'protein subunit' and 'Not Sure'. Of the remaining 56 participants, the majority (80.4%) said they were 'not sure' what type of vaccine it was. (Figure 2) to show the distribution of responses given; some participants gave more than one response.

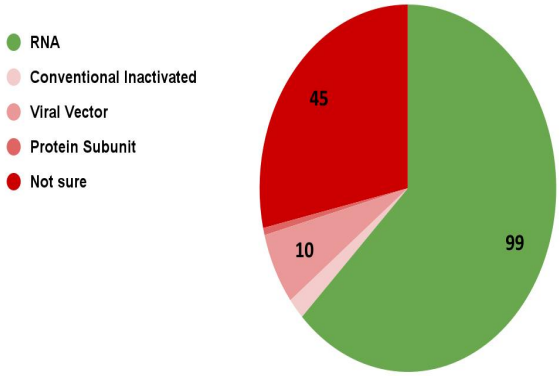

Figure 2. The responses given by participants about the type of vaccine are shown in Figure 2. Some participants gave more than one response and they are shown individually in this figure. 155 participants gaven 158 responses. 3 participants thought the vaccine was a conventional inactivated vaccine and 1 participant thought it was a protein subunit vaccine.

The majority of participants (67.3%) correctly identified that the vaccine offered between 51-100% protection. 39 participants (25%) said they were 'not sure' whilst 11 (7.1%) thought it offered 1-50% protection.

Compliance with the vaccine

129 respondents reported having had the COVID-19 vaccine (82.7%) with 100 (64.1%) having had both doses at the time of the survey (Figure 3) with a median time interval between doses of 8 weeks.

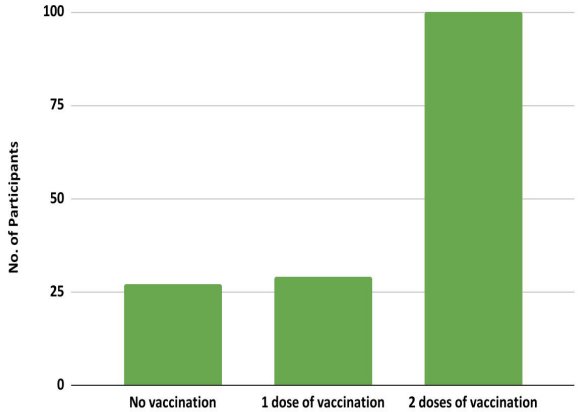

Figure 3. Bar chart showing the number of participants who had received either 1 or 2 doses of the vaccination and the number who remained unvaccinated at the time of survey.

Of the 17.3% who remained unvaccinated, the most common reason listed was due to allergy (37.0%). 1 participant listed 'pregnancy' as the reason which was in line with government advice at the time of data collection. 7 participants (25.9%) found accessing the vaccine difficult, and 2

were unable to be vaccinated due to contracting COVID-19 at the time vaccination was due. 3 participants (11.1%) listed 'personal reasons for not having the vaccine whilst 1 participant said it was because they were 'unsure of the side effects. 1 participant mentioned that they had not been offered the vaccination.

70.4% of those who remained unvaccinated were female, which reflects the overall gender distribution of the respondents and there was no significant difference in rates of vaccination between males and females ($p = 0.912$). There were 8 doctors (of varying grades), 12 nurses, 4 HCAs, 2 pharmacists, and 1 Other staff member who were unvaccinated.

19 of the vaccinated staff members (14.7%) reported receiving the Oxford Astrazeneca vaccine, while 108 (83.7%) reported having the Pfizer-BioNTech vaccine. 8 reported having experienced' adverse reactions'. Adverse reactions listed by respondents included sore arm (62.5%), fatigue (25%), myalgia (25%), shivers (25%), and headache (25%).

Effects on surgical practice

63.5% of participants agreed that the vaccine rollout had boosted their confidence in delivering care to patients. 3.8% of participants felt the vaccine had depleted their confidence. 44.9% felt the vaccination programme had had no impact on their clinical practice.

Discussion

This was an important study as it sought to understand the perception of and adherence to the COVID-19 vaccination programme amongst a group of frontline healthcare workers. It is important to assess this in healthcare workers for several reasons. Firstly, they may be involved in the delivery of care to patients both with and without COVID-19 infections and therefore could act as a transmission source between vulnerable individuals. Secondly, as frontline healthcare workers, the general public is likely to look up to the members of the medical professions to guide their response to the vaccination. Thirdly, as individuals who have medical training, they should be some of the best placed to make informed decisions regarding their personal healthcare decisions. Finally, they were involved in the care of patients with COVID-19 during the worst parts of the pandemic, preceding the vaccination programme and as such have some of the greatest insight into the impact COVID-19 can have (7; 8; 9).

As expected from a scientific community, the most important source of information for staff was scientific fora with 38.1% of respondents learning about the vaccine via this method. However, 15.5% felt social media was an important avenue by which they had heard about the vaccine and 23.3% by word of mouth. Both of these channels are not peer-reviewed or regulated and as such, it is possible for misleading or incorrect information to be gained. This is important because even staff working within the medical profession are using 'unreliable' sources for information and may have poor or incorrect knowledge regarding the vaccine. (10) Indeed, in our cohort, only 63.6% of respondents correctly identified the type of vaccine and 67.3% were able to identify the level of protection offered.

It would suggest there may be a role for greater organization-level education of staff regarding the COVID-19 vaccination. This is not only important because it would allow staff to give more accurate information to patients if they were asked about the vaccination but improved knowledge and understanding may also lead to improved adherence to the vaccination programme (11).

Interestingly, the vaccination rate in this cohort was only 82.7% which was below the national vaccination rate of healthcare workers at the time this study was completed (NHS England, 2021). 25.9% argued that this was due to difficulty accessing the vaccine. Streamlining the booking process, offering more time-slots or a greater period of time over which vaccinations are available, or offering vaccinations on hospital sites (instead of at vaccination centers) may increase adherence. The latter is particularly important for healthcare workers with long and

irregular shift patterns who may not be able to travel to the vaccination center after work or who may not be available if only a short time period for vaccination is offered.

An interesting observation from this cohort is the understanding of 'side effects' vs. 'adverse reactions'. In this cohort, 8 participants listed having experienced 'adverse reactions' but when asked to give details the responses included soreness at the injection site (62.5%), fatigue (25%), myalgia (25%), shivers (25%), and headache (25%). These would be considered common side effects of many viral vaccinations rather than adverse reactions. In this cohort, we did not consider from participant responses, any adverse reactions to having occurred. However, it is important to note that if such side effects are being described by those working in the medical profession as adverse reactions, it may contribute to the reduced acceptance of the vaccine amongst the general public. Again, organizational-level education could help to reduce this confusion. This could take the form of written material, short electronic or printed information sheets or infographics, in-person dedicated teaching sessions, or short announcements at key team meetings.

Finally, we found that the majority of participants felt the vaccination programme had increased their confidence in delivering care to patients. Interestingly 3.8% felt the vaccine had depleted their confidence and we attribute this to a concern that staff, as well as patients and their relatives, may be more likely to disregard advice on hand-washing, social distancing, and the use of personal -protective equipment after receiving the vaccination.

44.9% felt the vaccination had no impact on their clinical practice. The authors would argue that clinical practice should not change as a result of the vaccine, with all infection control practices remaining the same regardless of vaccination status. However, there is evidence that high levels of stress at work are associated with a lower quality of patient care. Therefore, staff who feel safe and comfortable at work will hopefully provide a better standard of care, although they may not be aware of this (12; 13).

Conclusion

Overall, perception of and adherence to the COVID-19 vaccination programme amongst clinical staff at our unit was good. However, we did identify important gaps in staff knowledge, and addressing these could lead to improved compliance. In addition, there was a wide range of sources of information used by staff. We would argue that an increase in the amount and quality of organization-level educational initiatives would improve both personal knowledges and increase the ability of staff to educate patients and would also reduce staff reliance on sources such as word of mouth and social media for vaccine information (14).

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