ISSN : 2949 - 9100

International Journal of Health and Dentistry Care (IJHDC)

IJHDC : Health and Dental Publication
Available Online at: www.ijhdc.com
Volume – 2, Issue – 1, January – February - 2023, Page No. : 32 - 35

A comparative analysis to assess the perception and attitude towards COVID-19 Vaccination in Human

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Citation This Article: Jamson Enitan, Bdesola Jyekunle, Vichard Domi Nkele, Lmarachi Suioyoy, "A comparative analysis to assess the perception and attitude towards COVID-19 Vaccination in Human", IJHDC – January – February - 2023, Volume – 2, Issue - 1, P. No. 32 – 35.

Type of Publication: Review Article

Conflicts of Interest: Nil

Abstract

Background: Vaccination is one of the most effective ways to tackle the COVID-19 pandemic, and the findings of this study will help identify shortcomings of the vaccination program and improve effectiveness of strategies in future policies.

Objectives: This study was conducted to assess and compare the knowledge, attitude and practices of online and offline groups of the population in regard to COVID-19 vaccination.

Materials and methods: Participants in the offline group were randomly selected from those attending the OPD at a tertiary care centre.

Conclusion: This study establishes that being higher on the social-economic ladder was associated with better knowledge and less hesitancy towards the vaccine.

Keywords: COVID-19, Physical, Social, Emotional

Introduction

The COVID-19 epidemic has impacted people's physical, social, emotional, and behavioral wellness, among other elements of their lives.[1] People are desperate to end this pandemic, and mass vaccination appears to be a potential solution.

The COVID-19 vaccine was launched on 16th January 2021 for healthcare and frontline workers. This was followed by a vaccination drive aimed at senior citizens over 65 years of age and persons between 45 and 59 years with comorbid conditions. The reason for this was patients with long-term comorbid conditions such heart disease, immune system problems, diabetes, and airway disease have been most affected. The general population

aged 18 and above started receiving their first dose from 1st June 2021.

Additionally, the safety of vaccinations is questioned given their fast growth. This has previously been associated with adverse problems. For instance, the Guillain-Barré syndrome risk was doubled by the swine flu vaccination.

This study aims to gauge and compare peoples' perceptions and practices between respondents filling the online questionnaire and people who took the offline survey. This will help in identifying any shortcomings of the vaccination program and improving the quality of strategies in future policies.

Objectives

To describe the socio-demographic profile of study subjects among both online and offline studies.

To find out the perception of the subjects towards vaccination and COVID appropriate behaviour among both online and offline studies and to compare the perception of subjects between both the studies (i.e online and offline).

To identify reasons for acceptance/non-acceptance of COVID-19 vaccine by the subjects in both online and offline studies and to compare the factors between both the studies (i.e online and offline).

Materials and methods

Ethical Considerations: Appropriate permission was obtained from concerned authorities. Ethical clearance was obtained from the Institutional Ethics Committee (IEC) of the institute. There were no personal identifiers and data was presented in aggregate form. Informed consent was obtained as per IEC guidelines.

Study Design: Cross-Sectional Comparative Study (The report is based on the guidelines of the STROBE statement)

Study Setting: The study was carried data was collected over a period of two months between November-December 2021.

The questionnaire was adapted to the current scenario. Changes were made after reviewing relevant literature on vaccine hesitancy, knowledge and perception of the population towards COVID-19 vaccination prior to and after the commencement of the vaccination drive. It consisted of socio-demographic profile, status of vaccination and questions assessing the knowledge, attitude and perception of the respondents. The adapted questionnaire was pre-validated and tested by researchers.

For the offline survey, the participants were handed the survey form, which they returned after filling. The forms were made in English and local language for their convenience. The data collected was entered into Google Sheets for analysis.

For the online survey, a Google Form was created and distributed among friends and relatives using the snowball sampling method. The form was created in English, and local language and participants had to go through the participant information sheet and agree to the informed consent form before they could start filling out the questionnaire.

Participants

All participants were between 18 - 65years old. The study participants in the offline survey consisted of randomly selected patients and their relatives attending the OPD at a Tertiary Care Center. The online survey consisted of participants who had access to the internet and were comfortable filling the online questionnaire in English. Online participants were selected using the snowball sampling method.

Inclusion criteria

- Participants aged between 18 and 65.

- Participants residing in Mumbai.

Exclusion criteria

- Participants who filled incomplete forms.
- Participants who weren't fluent in English.

Data sources and measurement

For each variable of interest, data was collected using a pre-validated questionnaire. No manipulation of data was done in the process. The online respondents read and interpreted the questions without being observed by the investigators whereas the questionnaire was filled by offline respondents in the presence of the investigators. In order to avoid any measurement bias, the surveyors remained neutral at all times with regards to the interpretation of the questions. Participants were encouraged to give uninfluenced answers to all subjective questions throughout the survey process. The assessment was comparable between both groups i.e online and offline since the same questionnaire was distributed with the order of questions also being the same.

Quantitative variables

When assessing knowledge, a knowledge score was calculated based on the correctness of the responses in the knowledge section of the questionnaire. A correct answer was given 1 point, an incorrect answer was given -1 points, and 0 points were given for being unsure. Participants were classified as having above average, average and below average knowledge. A score below 0 was considered "below average" knowledge, 0-3 was considered "average" and more than 3 was considered "above average".

This method of calculating knowledge and hesitancy scores was used as there was no pre-existing way to classify the participants on the basis of their knowledge or hesitancy.

Statistical Methods

Descriptive analysis was used to describe the demographic characteristics and outcome variables. Significant differences between the two groups were explored using crosstabs which were made using IBM® SPSS® Statistics 26. Significance was considered at a 95% confidence interval with a p-value less than 0.05 and was calculated using the Pearson Chi-square test.

Results

Participants: A total of 350 participants in the offline mode and 375 participants in the online mode agreed to participate. Out of these, ten and two participants filled out incomplete responses in the offline and online surveys respectively. Six participants in the offline study and thirty participants in the online study were not residents and were excluded as well. Thus, the number of valid responses was 350 each for both modes.

Descriptive Data

Fig. 1: Demographic Characteristics

The biggest differences between the two groups were in education and income, with 82% of the online group being graduates, as compared to 27% of the offline group, and only 23% of the online group having an annual household income of less than 5,00,000 rupees, as compared to 77.75% of the offline group. There was also a significant difference in the mean age (26.8 years vs 32 years) and gender distribution of the two groups, as can be seen from Fig. 1.

Discussion

The COVID-19 pandemic further unmasked the growing divide between socio-economic stratas. Since the pandemic has variably affected all demographics, it becomes imperative to identify the difference in perception of the ongoing vaccination drive amongst different socio-economic backgrounds. This novel study was conducted to assess and compare the difference in the knowledge, attitude and perception towards the COVID-19 vaccine between offline responses collected from patients and their relatives visiting a tertiary care hospital and online responses from randomly selected individuals with good access to technology and ability to fill out online forms.

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