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Attitude and Awareness of Pakistani Population Towards COVID-19 Vaccination

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A B S T R A C T

Background: The novel-corona virus (COVID-19) is a single-stranded RNA virus that caused severe acute respiratory syndrome in last three years. The WHO declared it as a pandemic in March 2020, and recommends immunizing against this viral infection. Many vaccines are now available globally.

Objective: Current research work was carried out to investigate about the attitude and awareness of Pakistani population towards COVID-19 vaccination.

Methodology: A cross-sectional study was conducted in Karachi from May-2021 to July-2021. Data has been collected from 391 respondents by designed questionnaire. Ethical Review Committee, Faculty of Pharmacy, Hamdard University approved the study (Reference No. UERC-2021-012). Informed consent was obtained from each participant. Collected data was analyzed by SPSS version 22.

Results: Three-hundred-ninety-one (N=391) respondents included in analysis. Male 39.60% (n=155), Female 60.40% (n=236). Education level; 0.50% (n=02) Primary, 1.50% (n=06) Secondary, 1.80% (n=06) Matric, 15.10% (n=59) Inter, 63.80% (n=250) Graduate and 17.60% (n=69) Post-Graduate. 88.10% (n=347) respondents were not having any chronic disease. Among chronic diseases; 9.30% (n=03) have Diabetes-Mellitus, 10.30% (n=04) have Hypertension and 77.60% (n=28) have other chronic disease. 95.10% (n=372) respondents are aware of COVID-19 infection, 83.70% (n=329) have vaccine information, 61.50% (n=233) believe that COVID-19 vaccination is a prevention against virus. Majority of respondents (90.60%) are not vaccinated yet and only almost half (55.10%) of them are willing to get vaccination. Respondents' preferred Chinese vaccine SinoPharm 49.80% (n164) over other vaccines.

Conclusion: Majority of Pakistani population is well aware about COVID-19 infection and prefers to get Chinese vaccine over vaccine of other countries.

Keywords: Pandemic; COVID-19; awareness; vaccines; SinoPharm

I N T R O D U C T I O N

Outbreak of corona virus (COVID-19) is a bleak reality of end of 2019. The novel beta-coronavirus caused severe acute respiratory syndrome (SARS-CoV-2), is a single – stranded RNA virus which is generally considered to be first appeared in Wuhan, China in 2019 [1]. The virus was highly contagious and spreaded (infected) globally in more than 200 countries and territories, therefore World Health Organization (WHO) declared COVID-19 as a pandemic in March 2020 [1]. China CDC and National

Health Commission named it pneumonia of novel corona virus and virus declared as 2019-nCoV on 3rd January 2020 [1]. World Health Organization termed the corona virus disease 2019 as SARS-CoV-2 or COVID-19 [1]. The virus is considered as highly contagious and transmits by human contact and inhalation of respiratory droplets [2]. Social distancing, personal hygiene, using hand sanitizer, disinfectants and frequent hand washing are some of the steps that can protect the individuals from the infection [2]. Globally, due to corona virus infection more than 210 million cases are reported and among them around 4.4 million deaths are confirmed [3].

Similarly, more than a million of cases of corona virus are reported in Pakistan from January 2020 and 24,713 deaths are reported [3, 4]. Due to this high mortality rate from the past one and a half years, in order to prevent the loss of lives of millions of individuals globally, significant efforts were done to come-up with safe and effective vaccines against virus. WHO is working tirelessly with other stakeholders and pharmaceutical companies to develop safe and effective vaccines [5]. Currently WHO has approved several vaccines, SinoPharm (China National Pharmaceutical Group), Pfizer-BioNTech (Pfizer, Inc., and BioNTech), Sputnik V (Gamaleya Research Institute of Epidemiology and Microbiology), Moderna (ModernaTX, Inc.), AZD1222 (Oxford/AstraZeneca COVID-19 vaccine), JNJ-78436735 (Janssen Pharmaceuticals Companies of Johnson & Johnson), Sinovac (Sinovac Biotech Ltd), and CanSino Bio vaccine (CanSino Biologics Inc.).[6]

The safety and efficacy of the developed vaccines are still not completely reliable.[5] Despite this fact, like most of the countries, Pakistan has started vaccination on immediate basis. The recently available vaccines for public free of cost in Pakistan are SinoPharm, Sinovac, AZD1222, CanSino Biologics, Moderna and Pfizer-BioNTech. Due to this reason, current research work was carried out to investigate about the attitude and awareness of Pakistani population towards COVID-19 vaccination.

METHODOLOGY

This observational Cross-Sectional study was conducted in Karachi, Pakistan from May 2021 to July 2021. Primary data has been collected from general population by Google Questionnaire Form. Sample size of study was determined by precision analysis technique [7]. Minimum sample size of study was 299 individuals, however primary data has been collected from more than four-hundred-ten (410) individuals by designed questionnaire, data analysis was done on three-hundred-ninety-one (391) respondents, because nineteen (19) respondent's data was incomplete. The Institutional Ethical Committee of Hamdard University, Karachi approved the study design and method (Reference Number: UERC-2021-012). Prior to initiating the survey, an informed consent was obtained from each participant. Forms were distributed by hand, email and WhatsApp Groups. Collected data was analyzed by Microsoft Excel and SPSS 22 version for determination of descriptive statistics.

RESULTS

Three hundred ninety-one (N=391) respondents included in data analysis. Demographic data of study was; Male 39.60% (n=155), Female 60.40% (n=236). Age distribution was 16.80% (n=66) 13-20 years, 65.90% (n=259) 21-30 years, 10.70% (n=42) 31-40 years, 2.50% (n=10) 41-50 years, 2.30% (n=9) 51-60 years and 1.30% (n=5) 61-70 years.

Education level of respondents were; 0.50% (n=2) Primary, 1.50% (n=6) Secondary, 1.80% (n=6) Matric/O Levels, 15.10% (n=59) Inter/A Levels, 63.80% (n=250) Graduate and 17.60% (n=69) Post Graduate. As far as concerned with the sector of respondent's occupation; 23.30% (n=81) Public Sector and 76.70% (n=266) Private Sector. Marital status of respondents were; 69.30% (n=273) Single, 29.40% (n=116) Married and 1.30% (n=5) Divorced.

88.10% (n=347) respondents were not having any chronic disease, 9.10% (n=36) respondent were having chronic disease, while 2.80% (n=11) are not aware that whether they have or have not any chronic disease. Among chronic diseases; 9.30% (n=3) have Diabetes Mellitus, 10.30% (n=4) have Hypertension, 2.80% (n=1) have Osteoporosis and 77.60% (n=28) have other chronic disease. Responses of participant regarding their awareness and attitude towards vaccination are mentioned in Table **1**.

Table 1. Awareness Level and Attitude of Respondents Regarding COVID-19 Vaccination.

Are you aware of COVID-19?	**Yes**		**No**		**Don't Know**
	95.1% (n=372)		3.8% (n=15)		1% (n=4)
Do you have information about COVID-19 vaccination?	**Yes**		**No**		**Don't Know**
	83.7% (n=329)		13.5% (n=53)		2.8% (n=11)
If YES, do you believe that COVID-19 vaccination will be a prevention against virus?	**Yes**		**No**		**Don't Know**
	61.5% (n=233)		13.5% (n=51)		25.1% (n=95)
Have you received any dose of COVID-19 vaccine?	**Yes**			**No**	
	9.4% (n=37)			90.6% (n=357)	
If YES, after vaccination, have you found any unusual side effects (other than known side effects)?	**Yes**		**No**		**Don't Know**
	4.2% (n=9)		40.5% (n=87)		55.3% (n=119)
If you are not vaccinated yet. Are you willing to get vaccinated in recent future?	**Yes**		**No**		**Don't Know**
	55.1% (n=205)		26.6% (n=99)		18.3% (n=68)
Which vaccine will you prefer?	**SinoPharm**		**CanSino**		**Sputnik V**
	49.8% (n=164)		12.8% (n=42)		37.4% (n=123)

DISCUSSION

It is believed that bats were the primary carrier of this novel corona virus, which has been emerged first time in Wuhan, China in 2019 [8]. The virus transmitted by specie to specie and finally reached to human, subsequently, it has been spread globally and declared global pandemic by World Health Organization.[8] Devastation due to corona virus continues in the world especially in those countries where public health measures were not implemented well. Lockdown was the only solution for Governments to reduce the morbidity and mortality. However, economic losses occurs 10-31% of GDP (Gross Domestic Product) in various developing countries of the world due to lockdown [9].

Return to normal life majorly depended upon implementation of mass vaccination to public, especially high risk individuals. It is believed that vaccination may prevent further spread of infection [2]. World has directed their efforts for the development of safe and effective vaccine against corona virus infection to counter pandemic, S-protein of virus was used as immunogenic substance in vaccine by most of the vaccine manufacturers.[8] In current survey, the end of point of study was to determine the awareness of Pakistani population towards COVID-19 vaccination. Findings of current study reveals that about 95.10% (n=372) of the

respondents are aware of COVID-19 infection, however, 83.70% (n=329) respondents have information about COVID-19 vaccine up to certain level and among them, 61.50% (n=233) believe that COVID-19 vaccination is a prevention against virus. Interestingly, despite such high level of awareness majority of respondents (90.60%) are not vaccinated yet and only almost half (55.10%) of them are willing to get a vaccination in near future. It means only 9.40% (n=37) respondents are vaccinated till now with first a first dose. It is also noted in current study that unusual rate of adverse effect was only 4.20% of these vaccines in vaccinated individuals. From this survey we have found that majority of respondents' preferred Chinese vaccine SinoPharm 49.80% (n=164), which is followed by Russian vaccine Sputnik V 37.40% (n=123). These results strengthen the expectation that newly approved vaccines can help to mitigate the profound global effects of the COVID-19 pandemic [10]. The major action plan is aim to accelerate vaccines development without curtailing the critical steps required by sound science and regulatory standards [10] .Industry benchmarks for traditional vaccine development paradigms cite attrition rates for licensed vaccines for more than 90% [11] .

Majority of survey respondents 65.10% (n=259) are in between age group of 21-30 years. Interestingly, 63.80% (n=250) are educated with at least graduate

degree. Finally, to make sure the fair supply of vaccine in all affected areas of the world, the vaccines should be manufactured in sufficient quantities and there must be strong cooperation and coordination in between health regulators, policy makers, vaccine developers, public health bodies, governments and funders [11]. Limitations of current study is that at the time of start of vaccines only Chinese and Russian vaccines were available in Pakistan, later on British and American vaccines arrived and opinions of Pakistani population regarding these vaccine is not available in current study.

CONCLUSION

Majority of Pakistani population are well aware about COVID-19 infection and vaccines. Pakistani population prefers to get Chinese vaccine over vaccine of other countries.

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