RESEARCH ARTICLE

MYTHS AND MISCONCEPTIONS RELATED TO COVID-19 VACCINATION AMONGST GENERAL PUBLIC OF ISLAMABAD AND RAWALPINDI

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ABSTRACT

Objectives:

1. *To identify the myths and misconceptions regarding COVID-19 vaccination among the general public of Islamabad and Rawalpindi*
2. *To determine awareness regarding COVID-19 vaccination among the general public of Islamabad and Rawalpindi*

Design: *A Descriptive Cross-Sectional Study.*

Duration: *The study was carried out in the medical colleges and hospitals of Islamabad and Rawalpindi. It was a study of 8 weeks conducted between August and September 2021.*

Materials and Methods: *The study used both personal interviews and an online questionnaire. Google form having twenty-nine questions; each providing multiple choices in relation to the socio-demographic profile, vaccine status, myths and safety regarding the COVID-19 vaccine of the participants. One hundred and fifty three participants were included in the study. Participants were 18 years of age and above, residents of Rawalpindi and Islamabad. Individuals having any psychiatric disorders and cognitive disabilities and pregnant women were excluded from study.*

Results: *Our study revealed that 71(27.1%) of the respondents had no myths related to the COVID-19 vaccine. While 25(9.5%) believed that, the vaccine had active viruses and 18(6.9%) believed that the vaccine causes clots and varicose veins. Another myth was that the COVID-19 vaccine causes autism in children 4(1.5%).*

Conclusion: *The study revealed that the public residing in Islamabad and Rawalpindi had only a few misconceptions about the COVID-19 vaccination. The educated people had adequate knowledge with respect to the efficacy, effectiveness, and safety of the COVID-19 vaccines.*

Keywords: *COVID-19 vaccines, Pakistan, SARS-CoV-2, Vaccine Hesitancy, Vaccine Myths*

INTRODUCTION

In Wuhan, China, a couple of cases of pneumonia of unknown etiology were reported to WHO on the 31st of December 2019. In the coming month, after vigorous testing and scrutiny, the agent responsible for these cases was detected and termed as the Novel COVID-19. [1] The infection caused by this agent referred to as SARS-CoV2 and the illness inflicted given the name COVID-19.[1]

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On the 30th of January, the World Health Organization took notice of the alarming situation caused by this agent and declared this upsurge a "Public Health Emergency of International Concern". The World Health Organization labeled it as Corona Virus Disease 2019 (COVID-19) on 11th February 2020 and a pandemic on 11th March, 2020.[2]

Up till February 2021, one hundred and eight million people were affected worldwide, causing 2.38 million deaths. In Pakistan, 5,60,000 cases and 12,218 deaths have been reported.[3,4]

Coronavirus infection is zoonotic disease spreading infection among animals and humans. The illness

spreads through respiratory secretions, droplet transmission and contact transmission. [5]

Symptoms and clinical signs vary from mild fever and upper respiratory symptoms to serious pneumonia. Common side effects include migraine, loss of smell and taste, nasal blockage, runny nose, muscle, joint pains, exhaustion, abdominal cramps and diarrhoea.[6,7]

Worldwide four variants of SARS-CoV-2 recognized until mid-year 2021, these included Variants being monitored (VBM), Variant of interest (VOI), Variant of Concern (VOC) and Variant of high consequence (VOHC). [8]

In order to control the continuous spreading of COVID-19 pandemic, the most important step is the availability and accessibility of effective vaccines. In phase III trials various COVID-19 vaccines have been found to have efficacy as high as 95% in preventing symptomatic COVID-19 infections. Forty vaccines have been authorized by a national regulatory authority for public use.[9]

The assembly and utilization of adequate SARS-COV-2 immunization faces many difficulties, choosing a suitable formulation, approval, mass manufacturing, cost issues and distribution. Alongside significant hurdle to legitimate immunization, there is vaccine reluctance among the population.[10]

Vaccine hesitancy refers to a delay in acceptance or refusal of vaccination despite the availability of vaccination services. It is one of the most important barriers in execution of effective and mass vaccination. It can be related to three things i.e., confidence, convenience and complacency.[11] An absence of trust in antibodies and suppliers, smugness for the need for vaccination and vaccine cost and inaccessibility pave the way for vaccine hesitancy. Furthermore, personal, cultural, religious and psychosocial beliefs also lead toward reluctance to vaccination.[12] Moreover, conspiracy theories and beliefs add fuel to fire in further convincing individuals to go anti vaccine, these adversely affect the human behavior and strengthen their suspicion of governments, healthcare professionals and pharmaceutical industries. There are various myths regarding COVID-19 vaccination among the general population. Some most prevalent is, vaccines alter DNA, they aren't safe because of being newly prepared, safety is not established, unsafe in pregnant ladies, infertility in women and impotency in males[13], vaccines are developed just to control the population, vaccines cause autism, they contain mercury and various dangerous elements as their ingredients.[14]

In this paper we have assessed various myths and conspiracies prevalent among general public of Rawalpindi and Islamabad.

METHODOLOGY:

A descriptive study of cross-sectional type was carried out on patients visiting outdoor departments, (OPD) of different hospitals in Islamabad and Rawalpindi from 10th August to 20th September 2021, after the ethical review board of the institution granted authorization. Altogether, 153 participants was included in the study; selected through Non-probability convenience sampling. The inclusion criteria were individuals 18 years and above and residents of Rawalpindi and Islamabad. Individuals having any cognitive disorders, mentally impaired, pregnant ladies and psychiatric patients were excluded. People whose responses were recorded had been explained the objectives of the study. Informed consent was taken from everyone who participated. The participants were assured of the confidentiality of their responses. A questionnaire was developed in the English language containing 29 items after utilizing the information already accessible on the COVID-19 vaccine from published journals, public views and concerns. Questionnaire was divided into 3 sections; the first section dealt with the socioeconomic profile of the participant and contained 7 questions. The second section was dedicated to the vaccine status of the individual and it had seven questions in it. The third section had a total of 16 statements that tested the individual's knowledge of myths and safety regarding COVID vaccine.

A self-structured Questionnaire was distributed in 2 forms to the general public of Rawalpindi and Islamabad. An E-form in the shape of a “Google Form” was shared among individuals through online platforms that included WhatsApp, Telegram, Email and Facebook. Secondly, local individuals that could not interpret the English language were verbally explained the contents of the form and their answers recorded.

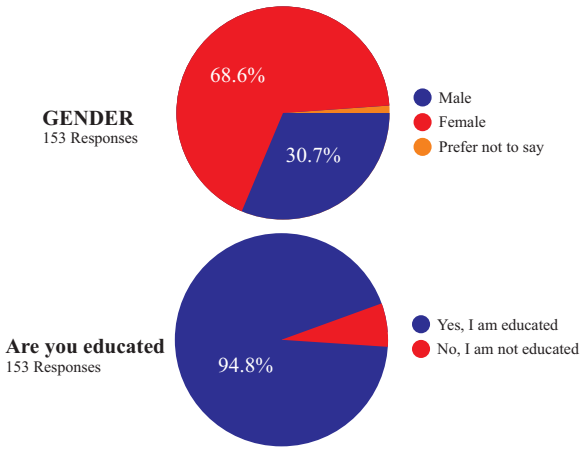
Participants duly filled out online questionnaires were included and incomplete forms were excluded from the study. Data were analyzed in SPSS version 25. Mainly descriptive statistics have been reported. For inferential statistics, we utilized the chi-square testing mechanism to assess the categorical variables where a p-value of < 0.05 was taken to be statistically significant.

RESULTS

Tables I, II and III show the demographic characteristics, vaccine status and myths status regarding COVID vaccine.

Table I: Sociodemographic characteristics of respondents

Characteristics	Number (n)	Percentage(%)
Age		
18-20	36	23.5
21-26	102	66.6
27-32	4	2.6
39 and above	8	5.2
Gender		
Female	105	68.6
Male	47	30.7
Prefer not to say	1	0.7
Martial Status		
Single	133	86.9
Married	18	11.8
Divorced	2	1.3
Residential City		
Rawalpindi	59	38.6
Islamabad	94	61.4
Educational Status		
Educated	145	94.8
Uneducated	8	5.2
Educational Level		
Under matric	3	2
Matric	1	0.7
F.Sc/F.A/I.com	18	11.8
Graduation	108	70.6
Masters	14	9.2
Monthly Income		
Upto Rs. 15000/-	60	39.2
Rs. 15001 – Rs. 30000/-	11	7.2
Rs. 30001 – Rs. 50000	18	11.8
Rs. 50000 and above	64	41.8



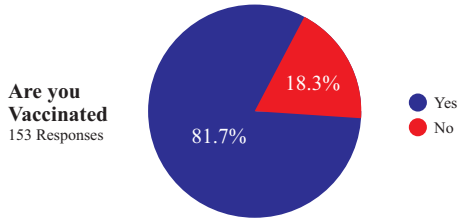


Table I represents the socio demographic characteristic of respondents. A total of 153 individuals responded, 30.7%(47) were male while the rest 68.6%(105) were females. The age distribution was made up of the following: 18-20(23.5%); 21-26 (66.6%); 27-32(2.6%); 33-38 (1.9%), and 39 years and above representing 5.2%. The majority of respondents were having graduation education (70.6%) followed by those with F.Sc / FA / I.com education (11.8%). The least being under matric education (2%). 61.4% (94) resided in Islamabad and the remaining 38.6%(59) lived in Rawalpindi.

Table II: Vaccine Status

Characteristics	Number (n)	Percentage(%)
Vaccine Status		
Vaccinated	125	81.7
Unvaccinated	28	18.3
Willingness to vaccinate (for unvaccinated)		
Willing	23	82.14
Unwilling	5	17.81
Reason of not getting vaccinated		
Mistrust in government	3	10.71
Lack of knowledge	3	10.71
Fear of side effect	10	35.71
Fear of injection	3	10.71
Accessibility	9	32.14
Vaccine Effectiveness		
Yes	130	85
No	19	12.4
Do not know	4	2.6
Vaccine Safety		
Yes	131	85.6
No	20	13.1
Do not know	2	1.3
Vaccine Control in pandemic		
Yes	127	83
No	20	13.1
Don't know	6	3.9
Vaccine role in controlling flu and pneumonia		
Yes	27	17.6
No	120	78.4
Don't Know	6	3.9

Table II shows the vaccine status of the participants. The majority of the participants were already vaccinated (81.7%), and the rest were unvaccinated (18.3%). Of those who were unvaccinated, (82.14) showed a willingness to get the vaccine. The most voted reason for not getting the vaccine was the fear of side effects (35.71%), followed by accessibility issues (32.14%). The majority (85%) believed in the effectiveness and safety of the covid vaccine. Eighty-three percent believed that vaccines played a role in the control of the pandemic and 27% believed that the covid vaccine could be used to treat flu and pneumonia.

Table III: Myths and safety regarding Covid Vaccine

Myths	Number (n)	Percentage(%)
1. Covid 19 vaccine causes infertility/impotency	14	5.3
2. Covid 19 vaccine is being used as a method of population control	16	6.1
3. Covid 19 vaccine alters DNA	15	5.7
4. Covid 19 vaccine causes autism in children	4	1.5
5. Covid 19 vaccine contains active viruses	25	9.5
6. Covid 19 vaccine contains controversial/ harmful substances	10	3.8
7. Covid 19 vaccine contains tracing devices/microchips	4	1.5
8. Covid 19 vaccine will cause death within 2 years	4	1.5
9. Covid 19 vaccine is pharmaceutical companies monopoly	12	4.6
10. Covid 19 vaccine clinical trail are only being used to make money	13	5
11. Covid 19 vaccine is being used by government to gather donations	21	8
12. Covid 19 vaccine will exacerbate my existing illness	11	4.2
13. Covid 19 vaccine is unsafe because its development was rushed	13	5
14. Covid 19 vaccine causes myocarditis	11	4.2
15. Covid 19 vaccine causes clots/varicose veins	18	6.9
16. I don't have any myths regarding the covid vaccine	71	27.1

Table III shows that the majority of the respondents had no myths regarding the covid vaccine (27.1%). The second majority (9.5%) believed that the vaccine had active viruses and after that (6.9%) believed that the vaccine causes clots/varicose veins. The least believed myth was that covid vaccine causes autism in children (1.5%).

Inference via CHI SQUARE TEST

Gender * I don't have any myths regarding covid vaccine Crosstabulation

Count

		I don't have any myths regarding the covid vaccine		Total
		Yes	No	
Gender	Prefer not to say	1	0	1
	Male	24	23	47
	Female	46	59	105
Total		71	82	153

Gender * Covid 19 Vaccine contains active viruses ? Crosstabulation

Count

		* Covid 19 vaccine contains active viruses		Total
		Yes	No	
Gender	Prefer not to say	0	1	1
	Male	9	38	47
	Female	16	89	105
Total		25	128	153

Are you educated? * I don't have any myths regarding the covid vaccine Crosstabulation

Count

		I don't have any myths regarding the covid vaccine		Total
		Yes	No	
Are you educated	Yes, I am educated	71	74	145
	No, I am not educated	0	8	8
Total		71	82	153

Chisquare test was applied to check association between myths regarding covid vaccines and gender and education

Association between myths and education level is significant p-value, is 0.42 at p-value < 0.05. Association between myths and age was also calculated by applying chi square test and association is not signifiant, p-value 0.54 as p-value > 0.5.

DISCUSSION

In our current study, we aimed towards investigating views of the public of Rawalpindi and Islamabad regarding the COVID-19 vaccine, particularly in terms of availability, acceptance, myths, and misconceptions prevalent in the local community.

Vaccine acceptance has remained a global challenge, especially in developing countries. Studies indicated various myths and conspiracies related to measles, mumps, rubella and polio vaccines that result in vaccine rejection. Pakistan had been facing the same issues with polio vaccines for decades. Addressing these myths and misconceptions is important to protect everyone.[14,15]

The results of our study disclosed that majority of the people are aware of the effectiveness and efficacy of the vaccine in controlling pandemics. People have adequate knowledge that vaccines are safe and necessary to halt the spread of disease. Especially, educated participants were more in favor of pandemic control through vaccination and most of them were against the misconceptions related to vaccines. Similar studies have been carried out in Canada, the US and other countries related to beliefs in vaccines associated with education level where characteristics such as socio-economic and education level are kept under consideration while evaluating candidates who have refused vaccination. [17, 18]

Among the very few myths identified, the beliefs that vaccines contain active viruses and that it is being used by the government to gather donations, were more prevalent. People also feared that the vaccine causes clots/varicose veins. Similarly, a few of the participants believed that vaccine is being used as a method of population control and may exacerbate the existing illnesses of the people. These findings are comparable with some studies in Sindh and Punjab which also stated that people feared vaccine safety because of its serious side effects. A similar study was also conducted in various districts of Sindh revealing the conspiracies and myths related to COVID-19 vaccines. [18]

This study has some limitations. Firstly, the sampling technique used is non-probability convenience sampling, making the results less reliable. Secondly, a study is limited to the twin cities of Islamabad and Rawalpindi. A nationwide study may be conducted for more comprehensive results.

Addressing these myths and misconceptions can surely help in changing the behavior of the people towards vaccination campaigns. People should be informed that the vaccines that do contain SARS-CoV-2, have undergone specific chemical treatments that inactivate the virus mostly by binding to the virus's genetic material inhibiting its replication, thus destroying its ability to cause COVID-19.[19]

Secondly, there is no solid conclusion that all COVID-19 vaccines cause blood clots. A few reports were obtained about the emergence of blood clots with AstraZeneca COVID-19 vaccine, but it has a 1 in 1000,000 chance of causing blood clots. And, in nations where the AstraZeneca vaccine has been widely used, but the overall rate of blood clots has not increased, indicating that the advantages of immunization clearly outweigh the hazards in many situations. [20]

CONCLUSION:

The study revealed that people had only a few misconceptions about the COVID-19 vaccination. The educated people had adequate knowledge with respect to the efficacy, effectiveness, and safety of the available corona vaccines. Health authorities and organizations should focus on proper awareness and counseling people regarding the safety of vaccines.

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