PREVALENCE AND FACTORS OF NON-VACCINATION OF COVID-19 IN DISTRICT PESHAWAR, KHYBER PAKHTUNKHWA, PAKISTAN

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ABSTRACT

OBJECTIVES

To determine the prevalence and factors of non-vaccination of COVID-19 in District Peshawar.

METHODOLOGY

A cross-sectional analytical study was carried out in the district of Peshawar from Jun 15, 2022, to Nov 15, 2022. A total of 408 household subjects from randomly selected clusters were interviewed through a researcher-administered structured questionaire.

RESULTS

Out of 408 study populations n-363, 88.9% were Vaccinated, while The overall prevalence of non-vaccination toward covid-19 in district Peshawar was 11.0% (n-45). Most of the respondents were in the age group of 30-40 years (n-291). Most of the study subjects were married (n-275,67.4%). The 51.1% (n-23) female,75.5%(n-34) Married, 64.4%(n-29) of age 30 to 40 years, 35.5%(n-16) with education level Bachelors and above were Non-Vaccinated .

CONCLUSION

The prevalence of non-vaccination toward covid-19 was found to be 11.0%. Significant Factors were the respondents education and safety, effectiveness, and no danger of overdosage of anti covid-19 vaccines.

KEYWORDS: *Non-Vaccination, Vaccine, COVID-19, Prevalence, Pakistan, Knowledge*

INTRODUCTION

In Pakistan, the first identified two confirmed cases of coronavirus disease were on Feb 26, 2020, in Karachi and Islamabad.[1] Since then, Mar 18, 2020, patients have been recorded nationwide. The cases were confirmed through coronavirus antigen testing by rapid antigen test (RAT) and PCR. The only best measure to unfold the chain of coronavirus spread is to vaccinate the general population as soon as possible. Mistrust towards SARS-C0V-2 vaccines on social media as linking COVID-19 to the 5G network of mobile phones, the early death of vaccinated subjects and the pandemic was a terrorist weapon that scared the people to be vaccinated.[2] There was a significant challenge in fulfilling the vaccination coverage goal for population immunity. Many Research surveys are done through online questionnaires or by a third person, and the respondent's feedback only3 collects most data. Most of the research determined factors and responses of people toward vaccination while Our Research study was A cross-sectional analytical survey carried out in the district of Peshawar from Jun 15, 2022, to Nov 15, 2022, on prevalence and factors of Non-vaccination of covid-19.[4] Our data was collected directly from the individuals to find their actual status of vaccination. Also, there were very few studies in Pakistan, so we conducted this study to increase knowledge of the scientific community. To ensure the operative vaccination strategy in Pakistan, the prevalence and factors of non-vaccination of people toward Anti-SARS-CoV-2 were important to know.

METHODOLOGY

A cross-sectional analytical study was conducted in District Peshawar, Khyber Pakhtunkhwa, Pakistan. It is the 6th largest city in Pakistan, located in the centre of Khyber Pakhtunkhwa (province). In the 2017 census recorded, the population of Peshawar was 43,31,959, having males 22,29,681 and females 21,01,649.[5,6,7] Data collection and Data analysis were completed in six months. Following formula[8] was used for sampling size.[8]

$$n = z^2 \times p(1\text{-}p)/d^2$$

Due to the random cluster, the sampling technique of a 10% increment is applied; therefore sample size is

371+37 = 408

Here,

n = number of people

z = 1.96 (confidence level 95%)

p = prevalence estimate (0.41 or 41%)[9]

d = margin of error (0.05)0

The probability cluster sampling technique was used for data collection. The sample of the study population was selected through random cluster sampling. District

Peshawar has 93 Union councils, of which 16 have rural and urban populations.[10] Four of them were chosen as clusters. These clusters were selected randomly by the lottery method. Union councils have several houses registered with the Lady health supervisor (LHS). One subject from each home was chosen randomly, and houses were also randomly selected by a toss from the house numbers of the LHS Register to minimize selection bias. Only one household was interviewed face-to-face to reduce recall bias. Data was collected via a closed-ended researcher-administered structured questionnaire form. All Questions of the questionnaire, according to the previous literature, were validated for their importance, simplicity and relativity by the Board of Advance research studies.[11,12] Questions about age, gender, marital status, education, family structure, profession, monthly income, knowledge of vaccines and attitude towards vaccination were asked.[13] The inclusion criteria of study participants were 18 years and above, while exclusion was mental disorders. Questions about age and general health were asked to ensure the inclusion and exclusion criteria. And those respondents who could not answer the interview questions due to their poor mental status were excluded from the study. Confounding was controlled by statistical stratification. The outcome variable was vaccinated and Non-Vaccinated for protection against COVID-19. The study subject who received partial or complete doses of vaccines was considered vaccinated, while the subject who received no vaccine was labelled as Non-vaccinated. In the questionnaire for vaccination status, a question was asked, "Are you vaccinated for anti-SARS-CoV2?" The positive answer was considered vaccinated, while the subject with a negative reply was Non-vaccinated. The association of Vaccination and Non-vaccination was compared to the Knowledge, Gender, Age, Marital status, and Educational level of the study subjects. To know the Knowledge status of the participants, questions about safety, efficacy, vaccine overdose effects, vaccine-causing disease, the need for vaccines and post-vaccination allergic reactions to anti-SARS-CoV2 vaccination were asked. Gender (male/female)[15] is very important because, in developing countries, males are dominant and have great opportunities to benefit. Randomized selection in data collected from the household gave both genders equal opportunity.[14] Age is an imported variable knowledge with age groups.[16] In our data collection, age was taken in intervals, i.e. 19-29 years,30-40 years, 40 years & above. Marital status (single/ married) and Education status were divided into categories: Uneducated, Primary education, Matric, Inter, Bachelor and Above, as these were categorized to avoid confounding bias. Gender, age, Marital status and education were insignificant in this study but were

found significant for vaccination in other studies.[17,18,19] In qualitative variables, frequency and percentages were calculated. We used the chi-square test to associate independent qualitative and dependent variables. A p-value of less than 0.05 was considered significant. For data entry, SPSS 21 was used. Participants were informed about the purpose and procedure of the research and the confidentiality of the provided information. Data were collected anonymously. Ethical Approval was taken from Kabir Institute of Public Health Gandhara University Peshawar.

RESULTS

The overall prevalence of non-vaccination toward covid-19 in the district of Peshawar was 11.0%. Most of the respondents were in the age group of 30-40 years (291 participants). Most of the study subjects were married (n-275,67.4%).

Table 1: The Knowledge of the Study Subjects is Tabulated

Questions	Response			
	Yes	%age	No	%age
Are you vaccinated against COVID-19?	363	88.9%	45	11.00%
Do you know that the COVID-19 vaccine is safe?	381	93.30%	27	6.60%
Do you know about the effectiveness of the COVID-19 vaccine?	374	91.60%	34	8.30%
Is it dangerous to use overdose vaccines?	228	55.80%	180	44.10%
Does vaccination cause allergic reactions?	164	40.10%	244	59.80%
Does vaccination cause COVID-19 disease?	118	28.90%	290	71.00%
Is it possible to reduce the incidence of COVID-19 without vaccination?	111	27.20%	297	72.70%
Is the COVID-19 vaccine essential for us?	366	89.70%	42	10.20%

Table 2: Description of Demographics Gender, Age, Education, and Marital Status

Variable		Vaccinated	Non-Vaccinated	Chi-Square Value	P-Value
Gender	Male	219	22	1.72	0.15
	Female	144	23		
Age	19-29	54	06	2.86	0.239
	30-40	262	29		
	40<	47	10		
Education	Uneducated	02	03	12.83	0.012
	Primary	25	03		
	Matric	79	09		
	Inter	137	14		
	Bachelor & Above	120	16		
Marital Status	single	122	11	1.14	0.242
	Married	241	34		

Table 3: Description of Knowledge of Respondents Towards Vaccines

Variable		Vaccinated	Non-Vaccinated	Chi-Square Value	P-Value
COVID-19 vaccine is safe?	Yes	361	20	187.2	0.001
	No	02	25		
COVID-19 vaccine effective?	Yes	352	21	127.5	0.001
	No	10	24		
Dangerous overdose of vaccines?	Yes	191	37	13.06	0.001
	No	172	08		
Post-vaccination allergic reactions?	Yes	144	20	0.207	0.629
	No	219	25		
Does the vaccine induce COVID-19?	Yes	99	19	3.65	0.054
	No	264	26		
End of COVID-19 without vaccination?	Yes	78	33	51.75	0.001
	No	285	12		
COVID-19 vaccine essential	Yes	357	09	257.71	0.001
	No	06	36		

DISCUSSION

Our study results showed high vaccination coverage compared to a study in Peshawar conducted on Covid-19 infected population for three months in 2022. Non-vaccinated were 57.2%, while vaccinated were 42.8%.[20] As our study was on Peshawar's general population, non-vaccination prevalence was only 11%. A research study was published in AGKI of Karachi and was conducted from 08,2021 to 12,2021 in Punjab, Sindh, Baluchistan, and Khyber Pakhtunkhwa, A prevalence of Non-Vaccination was 41% while 59% of participants were vaccinated.[21] Our study shows a high coverage of vaccination and only 11% of non-vaccination as this study data were collected in late 2022 after a few severe layers of Covid-19, which changed the peoples approach and belief towards the vaccination. A study was conducted from 08,2021 to 12, 2021, in Islamabad, Khyber Pakhtunkhwa, Punjab and Baluchistan. Non-vaccinated prevalence was 41.96% and 58.04% were vaccinated.[22] Our study shows a high coverage, 89% Vaccination and 11% non-vaccination. In late 2022 the third layer of covid-19 endangered most non-vaccinated people. This physical knowledge and belief in vaccines increased vaccine acceptance and coverage. Research work in Saudi Arabia Al-Mohaithef found that people older than 45 and with a university degree were mostly willing to be vaccinated against COVID-19.[23] In Our study, most of the Participants of age 30 years to 40 years were mostly vaccinated as this age group is well-qualified and has a good scientific knowledge of vaccines. A Canadian Health Survey was done in 2021, showing an 11% prevalence of Non-vaccination, and the high coverage was in aged, well-qualified participants.[24] Education levels and age were significant. In our study, an 11% prevalence of Non-vaccination was also recorded. Vaccination status was significantly associated with levels of education, while age was insignificantly associated. The Canadian population achieved the 89% vaccinated status earlier because Canada is a developed country, while in Pakistan, most people believed false myths and rumours about vaccine safety, efficacy and effectiveness.

LIMITATIONS

Our study had fewer selection and recall bias chances due to the study design and large sample size. Results applied to the General population. Resources were limited. The sample population was from District Peshawar only. There was no approach to the National incidence management system.

CONCLUSIONS

Based on our study, it is concluded that more of the participants had received partial vaccine dosage; therefore, the population's positive attitude and Good scientific knowledge should be improved by eradicating fake myths and increasing awareness regarding vaccines through campaigns. Further studies should be performed to determine other factors of vaccination status towards anti-Covid-19.

CONFLICT OF INTEREST: None

FUNDING SOURCES: None

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