Outbreaks of diseases caused by emerging viruses continue to pose a great threat to human existence. Outbreaks by Influenza, Zika, Ebola, and the most recent one of coronavirus disease (COVID-19) are a reminder of our vulnerability [1]. The rapid spread of COVID-19, caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), across the globe, compelled the World Health Organization (WHO) to announce it as a pandemic in March 2020 [2]. Since then, the virus has claimed over four million lives and there are at present over 200 million active cases worldwide [3].

Until now, eight new variants of SARS-CoV-2 have been identified [4]. Vaccination against pathogenic viruses has proven to be the best strategy to control their spread. Hence, vaccine development was initiated very early in the pandemic, resulting in availability of vaccines against SARS-CoV-2. Different vaccines developed employ different mechanisms for generation of an immune response, however, all of the vaccines have proven to be highly effective against the virus. The trials conducted, have concluded that the vaccines have great efficacy in reducing the severity of symptoms, rate of hospitalization, and death [5].

Unfortunately, even after tremendous efforts by the government of Pakistan, Pakistani population has shown reluctance against COVID-19 vaccines. Pakistan started its COVID-19 vaccination program in February 2021 and so far only 16.7% of the population is recorded to be fully vaccinated [6]. Vaccination is the only way to contain this deadly virus and its widespread acceptance remains a worrying issue.

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A significant factor that seems to affect vaccine acceptance in Pakistan is misinformation and conspiracy narratives promulgated against COVID-19 vaccines.

and other inaccurate beliefs also induced anti-vaccine behavior in the general public. This led to many people defying the very existence of the virus or the seriousness of the situation. These conspiracy narratives were more profoundly seen in rural areas of Pakistan.

Religious factors have also had a detrimental impact on vaccine uptake. Some religious leaders argue that the vaccines are not ‘Halal’ and forbidden by Shariah. Moreover, a great deal of mistrust regarding vaccines is found within the communities who believe that vaccines are a Western conspiracy to eradicate Muslims [11]. A survey by Gallup Pakistan reported that out of 46% Pakistanis who were willing to get vaccinated, 42% did not prefer Western-made vaccines [14]. Politicization of the vaccine has further created confusion within the public and has fueled the idea that the government is using the virus as a mere excuse for receiving funds. Furthermore, safety concerns play a significant part in decreasing vaccine uptake. Speculations about the efficacy and side effects account for the unwillingness towards vaccination [15]. Some rumors even claim that the vaccine itself contains active virus. Khan ZA et al conducted a survey that showed 4.9% of the participants feared falling seriously ill within six months of vaccine administration while 39% were confident of contracting the virus right after [15].

What ultimately transpires from these aforementioned reasons is that there is a lack of confidence regarding vaccines amongst the population. The first step towards solving this problem would be gaining the trust of the people by assuring them that the vaccines are not only effective in preventing infections from the virus but also do not have any serious side effects which could affect an individual in an adverse manner. This can only be achieved by creating awareness amongst the masses. For that, advertisements, and podcasts, featuring health care professionals who address concerns of people should be run on different platforms. Influencers on social media can share their vaccination experience and encourage people to get vaccinated. Education regarding the importance, side effects, and even the different types of vaccines produced by different pharmaceutical companies should be given in all educational institutions. Furthermore, religious, and cultural leaders should be tasked to promote the process of vaccination. In remote areas where there are no or few digital facilities available, the local doctors can play their parts in inculcating a positive mindset among the population. These local doctors tend to be well known and more trusted amongst the community due to which their word will have greater impact on the people to motivate them to get their shots.

However, only gaining confidence might not be enough. A large proportion of people show rigid unwillingness towards vaccination. In this case, provision of incentives can prove to amplify acceptance rate. Incentives could include vaccination facilities in multiple neighbor-hoods, allowances from employers, and discounts at
Vaccination cards must become a requirement for day-to-day activities. Instead of only large-scale vaccination centers, small scale centers, but in greater quantities should be set up in every neighborhood to make the vaccination process more convenient. The current vaccination process which involves booking an appointment via text message also needs to be revised, it should be made appointment free especially in the rural areas where digital facilities are not readily available. More importantly, in order to generate vaccine acceptance in the general population, local statistical data that shows efficacy, safety, and survival rates associated with COVID-19 vaccines, should be openly available and with public reach.

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