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Short communication

Overview of COVID-19 Vaccine Hesitancy in Low and Middle Income Countries

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ABSTRACT

The unfolding of SARS-CoV-2 from China and its outbreak around the world has caused chaos globally. The need to control this deadly virus led to the immediate development of the COVID vaccine, which had risen doubts among the population about its utilization. Therefore, vaccine hesitancy has major repercussions for the success of vaccine initiatives and is a threat to acquiring herd immunity; this paper discusses the level of COVID-19 vaccine hesitancy in LMICs.

Keywords: COVID-19 disease, Vaccine hesitancy, Pandemic, SARS CoV-2 virus, Infectious disease.

EMERGENCE AND SPREAD OF DISEASE

The emergence of pneumonia-like illness started in Wuhan, China in December 2019,[1] caused by severe acute respiratory syndrome coronavirus-2 (SARS CoV-2), which causes COVID-19 or coronavirus disease which is a deadly infectious disease.[2] Its outbreak was declared a pandemic on 11th March 2020 by World Health Organization (WHO).[3] The different modes of spread of the disease were associated with human-to-human contact, transmission through airborne or aerosol, coughing, sneezing, and respiratory droplets.[4-8] As the spread was occurring, it further extended from different parts of China to other parts of the world through traveling cases. The virus had spread rapidly from Wuhan to different parts of China and other countries like Japan, Korea, Italy, the USA, and Germany.[9-12] Similarly, the spread was observed in Low-Middle-Income Countries (LMICs) (Egypt, Algeria, and South Africa) from China based on air travels, which were at high risk of initial introduction and spread of the virus.[13] The first case of COVID-19 was recorded in Nepal in South Asia, a student who had returned from Wuhan.[14] By July 2020, at least one case of COVID-19 was reported in South Asian countries (Afghanistan, Bangladesh, Pakistan, and the Maldives).[15] Thus, to control the transmission of the virus, which is a global public health issue there is an essential need for the COVID-19 vaccine to suppress the further transmission of the virus .[16]

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VACCINE HESITANCY

The As it has been observed that the severity of the majority of infectious diseases (Typhoid, Hepatitis vaccine, pneumonia, measles, etc.) declines with the use of the vaccine.[17]

Public concerns regarding the vaccines are as old as vaccines themselves, the population has always been concerned about the safety and need for vaccination. Therefore, vaccine hesitancy has always been a hindrance factor in eliminating diseases like measles, polio, etc., and one of the contributing factors to the re-emergence of diseases.[18] Vaccines for common childhood diseases are generally well accepted in LMICs; however, with the arrival of the CoV-19 vaccine, significant refusal and hesitancy have been witnessed when compared to routine immunization.[19] Thus, there are several reasons for the COVID-19 vaccine hesitancy, as the vaccine before it arrives on the market, must go through an extensive developmental and approval process, which may take many years. However, due to the rapid spread and severity of the COVID-19 virus, vaccine development and implementation were done prematurely, which became one of the factors of vaccine hesitancy.[20] Besides that, lack of information and disinformation affected the knowledge of people, which led the population to inappropriate practices towards COVID vaccine and be less likely to accept it .[21,22] It has been observed that awareness and increasing public knowledge can change the response of people toward a vaccine for protecting themselves and their families.[23] Challenges like inequality, unequal accessibility, conspiracy theories, and religious beliefs made people reluctant toward a vaccine and were causing hindrances, which were significant barriers to the successful delivery of COVID-19 vaccination.[24] The number of other causes for low confidence in the COVID-19 vaccine were socioeconomic and healthcare inequalities and inequities, some reasons for low uptake and hesitancy were concerned about long-term effects, side effects, and unknown future effects on health, apprehensions surrounding fertility, pregnancy, and breastfeeding were observed including importance, safety, and efficacy of vaccine.[25]

RATIONALE

The key determinant of any vaccination campaign is the trust in vaccines and the authorities administering them. Several studies have explored willingness for the COVID-19 vaccine in High-Income Country (HIC) residents, but very limited information is available regarding the acceptance of COVID-19 vaccine in LMICs where a major population of the world resides.[26,27]

As the mortality rate was relatively low in LMICs as compared to HICs due to the COVID-19 virus. Due to this reason, the disease may be perceived as less serious, hence less or no need for the CoV-19 vaccine.[28] However, very less is known about COVID vaccine acceptance in LMICs where large-scale vaccination has yet to begin. To understand this our paper complements the COVID-19 vaccine acceptance and the reasons and factors involved behind covid-19 vaccine hesitancy, by mainly focusing primarily on low- and middle-income countries (LMICs) with wide geographic coverage.

VACCINE HESITANCY IN LMICS

Vaccine hesitancy was observed in African countries related to the fact of lower COVID-19 mortality and widespread perception of being less at risk of getting COVID-19.[29] Recently, a survey by the company Comparisure investigated that around 52% of South Africans are unwilling to take the COVID-19 vaccine due to religious reasons, fear of needles, and unconsented government tracking.[30] A preliminary survey report regarding the COVID-19 vaccine revealed that 50% of Zimbabweans would accept the vaccine While 30% and 20% were unsure and would reject it, respectively.[31] A study conducted among the general population on COVID-19 vaccine acceptance in Iraq reported that 47.8% would delay vaccination until the safety of the vaccine has been built, which was the main cause of hesitancy.[32] However, a national cross-sectional survey in Qatar reported COVID-19 vaccine hesitancy in populations with different socioeconomic backgrounds, females, and elders more than 65 years. Those who were high-income natives were more hesitant and worried about vaccination.[33] Another survey from Bangladesh described the likelihood of COVID-19 vaccine hesitancy in unemployed, education levels less than or equal to high school, and households with monthly income less than 15,000 BDT.[34] Additionally, a study in Indonesia observed a higher COVID-19 vaccine acceptance rate among Indonesian healthcare workers [35], yet in DR Congo, the acceptance rate was lower among healthcare workers.[36, 37] The lack of accurate scientific data has shown high levels of scepticism about vaccine effectiveness.[38,39] In some studies, few respondents downplayed the consequences of disease and mentioned it to be a reason for not being vaccinated. Countries like the USA (39.3% 33.5–45), Pakistan (29.4%, 20.9–37.9), and Nepal (20.4% 6.7–34.1) reported a lack of concern about getting seriously ill from the virus.[28] However, this paper gives us a brief and broad understanding of different reasons for COVID-19 vaccine hesitancy across LMICs, among different population groups. In comparison to other vaccines, acceptance of the COVID-19 vaccine is lesser and inconsistent throughout LMICs. This applies more specifically to the COVID-19 vaccine rather than any other vaccine.

CONCLUSION

In conclusion, vaccine hesitancy has major repercussions for the success of vaccine initiatives and is a threat to acquiring herd immunity. A significant proportion of the population in LMICs was found to be hesitant towards the COVID-19 vaccine. The dependency on personal research to look for information and the provided information by the sources (government, social media) plays a major role in influencing the attitudes of people towards vaccine uptake. Governments and health care authorities need to build massive trust among the population and share authentic information to make sure that the maximum population is vaccinated in the fight against this pandemic.

Authors Contribution

1. **H.K:** literature search, literature review and outline development
2. **S.K:** literature search, literature review and referencing
3. **S.S:** Cross checking, reviewing and referencing

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