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Growing Need for Alternative Covid-19 Vaccination Strategy in the Face of Vaccination Uptake Hesitancy in the United States

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ABSTRACT

There has been accelerated effort geared towards the swift creation of COVID-19 vaccines; however, this fast pace poses a negative impact on vaccine acceptance. The current US COVID vaccine hesitancy of 23-33% has a ripple effect and makes it impossible to attain community immunity. The primary aim of this study was to assess the current COVID vaccine hesitancy rates and to argue for the need of more effective strategies to improve its uptake in the US. This paper reviewed quantitative peer-reviewed publications assessing COVID vaccine hesitancy in the US. It was revealed that COVID-19 vaccine hesitancy was influenced by myriad factors like gender, education, political affiliation, race and location. Transparency and a mix of communication, local partnerships, incentives and arguably legal strategies can be adopted to attenuate US COVID vaccine hesitancy. Lastly, vulnerable demographics (black Americans and conservatives) need targeted COVID vaccine information.

Keywords: Covid 19 Vaccines, Herd Immunity, Vaccine Uptake, Hesitancy and Vaccine Education

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INTRODUCTION

COVID-19 is posing a global health challenge and is wreaking havoc across countries with soaring incidence and mortality. The United States has not been left out, as of October 6th it had recorded 702,360 deaths and 43,773,573 cases (US COVID Tracker, 2021). Hence, there is a need for vaccination efforts to stem its transmission. This can occur via herd immunity which occurs when a large portion of a population is immune to disease through vaccination (Khubchandan et al., 2020a). The herd immunity threshold for SARS-CoV-2 is between 55% and 82% (Malik et al., 2020; Khubchandan et al., 2020a). The discourse on COVID vaccination is trite because this is the only effective way to achieve public protection (Khubchandan et al., 2020a). To achieve the broad administration of vaccination, COVID vaccination hesitancy must be minimal. However, anti-vaccination campaigns and mistrust/ conspiracy communication are still soaring (Quinn et al., 2020).

A vast majority of researchers have researched the adherence of U.S. citizens to potential COVID-19 prevention strategies (Malik et al., 2020; Khubchandani et al., 2020a). They reported that several Americans viewed not wearing masks as their right; similar trends are occurring with the uptake of vaccines where many Americans are hesitant. Therefore, it is against this backdrop that this paper aims to understand the drivers of vaccine hesitancy and assess effective strategies that can move the needle of vaccine uptake in the United States. This paper opines that considering the gap between the herd immunity and current COVID-19 vaccination, that there may be need for better COVID-19 uptake strategies to stem US hesitancy.

METHODOLOGY

Published peer-reviewed journals like PubMed and Epidemiologia etc which adopted a quantitative research methodology were a high priority for this review. This was important so that COVID vaccine hesitancy figures could be compared over time. Keywords used in the online search include; COVID vaccine hesitancy in the United States (Peer-reviewed journals / PubMed). Subsequently, downloaded

Table: Hesitancy Rate among Adult US population.

Author	Sample Size	Vaccine Hesitancy
Malik et al. (2020)	600	33%
Callaghan et al. (2020)	5,009	31.1%
Khubchandani et al. (2020b)	1878	23%
Shen et al. (2021)	-	25%
Shih et al. (2021)	800	33%

journals were screened and 18 were useful for this review.

DISCUSSION

General trends in US Vaccine Hesitancy and Factors

Vaccination against COVID is crucial for continued public health (Cooper et al., 2021). However, this may be hampered by vaccine hesitancy. Vaccine hesitancy can be succinctly described as the delay in acceptance or refusal of vaccines (Shen and Dubey, 2019). Shih et al. (2021) emphasized that hesitancy varies across time, place and vaccines. Vaccine hesitancy can further be explained using the epidemiologic triad; environmental factors (public health policies and propagated media messages); agent factors (vaccine safety and efficacy perception); host factors (knowledge, education) (Sallam, 2021). The trend in general vaccine hesitancy in the US did not start today, according to UPMC Center for Health Security (2016), similar trends (concerns on risk/ rushed vaccine) occurred in 2010 during the H1N1 influenza vaccination. Siddiqui et al. (2013) also support this observation. Shih et al. (2021) compared general and COVID vaccine hesitancy and found substantial patterns using multivariable logistic regression.

As government planned the accelerated creation of the COVID vaccine “Operation Warp Speed”, this heightened the public distrust in the vaccine (Callaghan et al., 2020). Additionally, the use of Emergency and Authorization as opposed to full approval is contributory to current hesitancy (Rosen et al., 2021). Against this backdrop, US scholars have attempted to assess hesitancy rates towards the COVID vaccine (Malik et al., 2020; Khubchandani et al., 2020b; Callaghan et al., 2020). Others utilized policy-oriented lens in their discussion (Shen et al., 2021). The findings of most studies may however be limited because most utilized online surveys that may reflect only the opinions of technology-savvy Americans.

From Table 1, COVID-19 vaccine hesitancy is between 23% and 33%. It should however be noted that the vaccine polls acceptance responses may vary from actual acceptance. Lazarus et al. (2021) concluded that vaccine hesitancy in the United States is accelerating. A contrary opinion was presented by the findings of Sallam (2021) who reported vaccine acceptance rates in the U.S. in April (56.9%), May (67.0%) and June (75.4%).

Variability in US Vaccine Hesitancy

Using only national-level data may be misleading. Few authors assessed vaccine hesitancy in the US across sex, race and “urbanicity” dimensions (Malik et al., 2020; Surgo Ventures, 2021). This led to the identification of micro-level disparities. Black Americans are less likely to accept the COVID vaccine. This may be explainable by historical research abuse and healthcare racial bias. Lower COVID vaccine acceptance also exists among women and Hispanics (Malik et al., 2020; Shen et al., 2021; Quinn et al., 2020). There was a consensus between Khubchandani et al., (2020b) and Callaghan et al. (2020) that Republicans are more hesitant. Geographical variability also exists. Malik et al. (2020) discovered that New York (epicentre of COVID-19 outbreak) had a low vaccine uptake of 43%, sharply contrasting Denver (75%).

STRATEGIES TO COMBAT COVID VACCINE HESITANCY

Communication (Dialogue-based)

Reviewed articles underscored the dire need for massive vaccination communication to attenuate burgeoning hesitancy (Table 2). These authors also buttressed the role of government, health professionals and civil society in achieving this. Malik et al. (2020) and Shen and Dubey (2019) separately discovered that U.S. citizens have the most trust of COVID-related information from health professionals. This can be achieved by evidence-based intervention (Caitlin et al., 2015; Khubchandani et al., 2020b). Quinn et al. (2020) underscored the need to commence communication at vaccine development phase. The public health commination and messaging strategies should be tailored to provide authentic community engagement in the short term to address the hesitancy. In such endeavors, there should be nondiscrimination against black Americans to reduce the untrustworthiness of the healthcare organization, the government, and pharmaceutical firms by the black Americans. The SARS COV 2 vaccine message must first recognize systemic racism as a justifiable reason for mistrust before providing information about the

Table 2: Historic Vaccine Strategies Scorecard (Learning for COVID-19).

	Vaccination Strategy	Historical effectiveness
1	Mass/ social media	less effective
2	Incentives	
3	Directly targeting unvaccinated population	
4	Mandate vaccinations/ impose sanctions on the non-vaccinated	
5	Increasing public knowledge	
6	Partner with religious leaders for community vaccination	more effective

Source: Data from WHO Sage (2014).

vaccine (Quinn, 2018). Moreover, dialogue and education are essential in addressing providers' concerns. The reason behind it is that the providers are considered credible by most black Americans and are thus better placed in addressing the vaccine hesitancy in black communities. The black healthcare workers have themselves resisted vaccines, and therefore, engaging them first is a crucial step towards herd immunity in the country. Finally, the medical community must demonstrate goodwill and care to create trust in the black community.

Additionally, impartial community-based groups, advocacy/policy organizations, scientific organisations, community leaders, and religious bodies are essential to bolstering trust in COVID-19 vaccines (Lazarus et al., 2021; Khubchandani et al., 2020b; Shen et al., 2021; Surgo Ventures, 2021; U.S. DHH, 2021). Shen et al. (2021) underscored the need to carry out approval discussions in the public eye. Quinn et al. (2020) emphasised that EUA factsheets for vaccines alone are not enough to convince U.S. citizens. Malik et al. (2020) also highlighted the need to craft bespoke COVID vaccination information to high-risk demographics and address false narratives.

Incentives

Incentives for green card holders who are fully vaccinated like access to sports events, pools and gatherings can aid uptake (Rosen et al., 2021). The author however noted that in U S. there is strong opposition to green passes that require evidence of COVID-19 vaccination due to violation of citizen's autonomy. WHO Sage (2014) observed that non-financial incentives like food or other commodities can encourage vaccination.

Legal Strategies

Legal strategies can mandate COVID vaccination. Rosen et al. (2021) highlighted that Israel is considering enacting a law that enables the ministry of health to disclose the vaccination status of citizens. However, the Supreme Court is undergoing a validity review of such laws. Local authorities have banned unvaccinated Israeli from working with children. Immunization information systems (IIS) can also provide vital information to track unvaccinated under such a strategy (Shen et al., 2021).

Employer mandate

Monitoring the working-class compliance to COVID vaccination may be possible if employers mandate it. However, this could be perceived as infringing on employees' freedom of choice (Lazarus et al., 2021).

CONCLUSION

COVID-19 pandemic has led to great mortality among Americans. A major solution (COVID vaccination) to attenuate this virus is under great scrutiny and is affecting the attainment of herd immunity. It has been established that there is variability in COVID vaccine hesitancy in the US (≤23%), this variability in the hesitancy exists across race (Black Americans and Hepatics), sex (female and pregnant women) and political affiliation (Republicans). Targeted communication to hesitant populations, use of community and religious leaders, transparency and legal or mandatory vaccination are some of the most effective strategies that can move the needle of COVID vaccine uptake in the US; however, many have complained that mandatory vaccination is coercion.

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