



COVID-19 Vaccine Hesitancy in South Asian Americans

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ABSTRACT

This review article investigated the factors that contributed to the COVID-19 vaccine hesitancy in South Asian Americans and other communities of color in the US. Only a few studies were done on South Asian Americans. The factors contributing to COVID-19 vaccine hesitancy in South Asian Americans were: concerns about the safety and lack of access to healthcare (language barrier). Many other factors found in other communities of color in the US were: lower education, lower income, younger people, women, rural residents, conservative/Republican political bias, social media's influence, lack of trust in government, and previous adherence (pre-pandemic) to general immunization.

We recommend the following strategies to increase vaccination rates among South Asian Americans:

- Develop health education/messaging programs for South Asian Americans that are culturally and linguistically appropriate.
- Include social media influencers and the medical community early in messaging strategies.
- Invest more on research on South Asian Americans to find which other factors also affect these communities.

COVID-19 vaccine hesitancy in South Asian Americans exists and should be addressed just like in every other community of color in the US. Information is very much needed to raise the awareness about the need for vaccines, increase vaccination rates, find strategies for overcoming vaccine hesitancy, and significantly reduce morbidity and mortality from COVID-19.

Key Words: COVID-19 Vaccine Hesitancy, US, South Asian American, Bangladeshi American, Nepalese American, Asian Indian.

INTRODUCTION

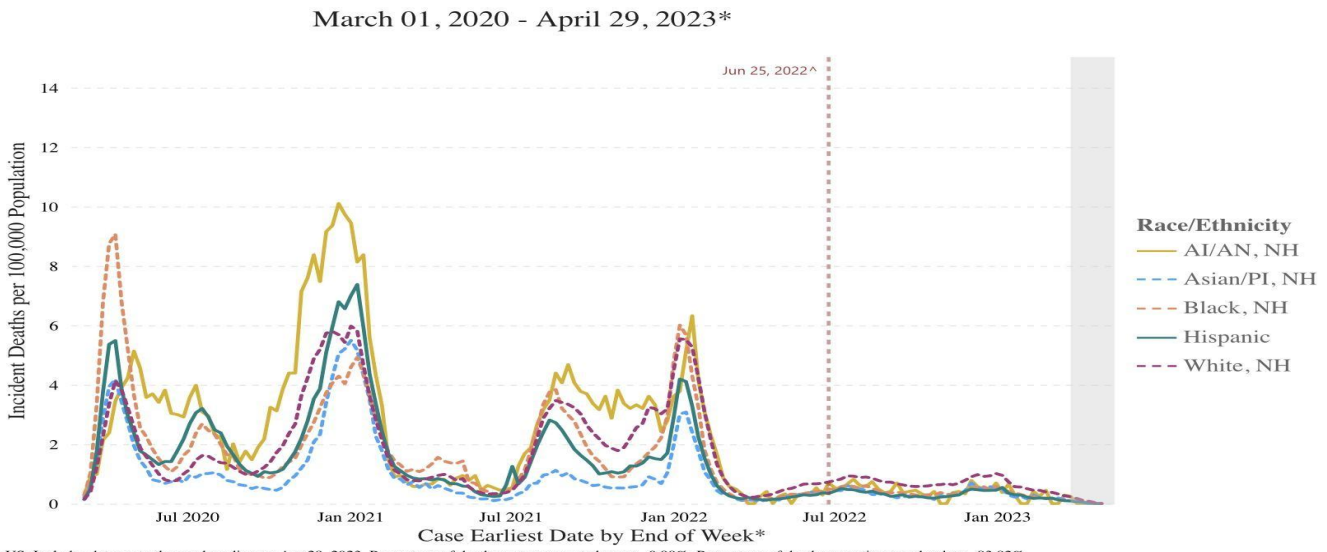
The Coronavirus Disease 2019 (COVID-19) is a respiratory disease in humans caused by a virus named Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) (CDC 2021). COVID-19 was very contagious, spread quickly around the world in 2020, and caused a global pandemic with high morbidity and mortality in both developed and developing countries.

The United States (US) was also hit hard by the COVID-19 crisis with an estimated: 146 million cases, 6.4 million hospitalizations, and 1.1 million deaths.¹ In the US, communities of color disproportionately suffered from the highest burden of illness and death from COVID-19. African Americans, Hispanic/Latinos, Asian Americans, Native Hawaiians, Pacific Islanders were much more likely to be hospitalized or die from COVID-19 compared to White Americans.^{2,3} One study reported that the death rate was double for Asian American, African American, and Hispanic/Latino American patients.⁴

South Asian Americans are part of the Asian American diaspora, and also suffered greatly from very high COVID-19 morbidity and mortality rates – patients, caregivers, and healthcare workers alike (e.g., Bangladeshi American physicians). While this is well known anecdotally in these communities, data are not available (not collected or reported). South Asian Americans include those with ancestry from Bangladesh, Bhutan, Maldives, Nepal, India, Pakistan, and Sri Lanka.

Aggregated Asian American data masks the considerable differences across this heterogeneous community – cases, hospitalizations, deaths. For example, the CDC reported COVID-19 cases and deaths that aggregated Asian Americans, Native Hawaiians, and Pacific Islanders – show no heterogeneity (see Figure below).⁵ Asian American data showed much variation in the COVID-19 hospitalization rates among Chinese, Indian, Filipino, Japanese, Korean, and Vietnamese Americans.⁶

One study from New York public hospital system reported that South Asian American patients had the highest rates of COVID-19 positivity (30.8%) and hospitalization (51.6%) among Asian American patients, second to Hispanic/Latino and African American patients. Chinese American patients had the highest mortality rate of 35.7% of all racial and ethnic groups.⁷ A community based study reported that Bangladeshi Americans made up less than 8% of NYC’s Asian population, but accounted for 20% of COVID-19 deaths.⁸



US: Includes data up to the week ending on Apr 29, 2023. Percentage of deaths among reported cases - 0.98%. Percentage of deaths reporting race by date - 83.82%. US territories are included in case and death counts but not in population counts. Potential six-week delay in case reporting to CDC denoted by gray bars. Weekly data with five or fewer deaths have been suppressed. AI = American Indian, AN = Alaska Native, NH = Non-Hispanic, PI = Pacific Islander. Excludes cases with unknown or multiple races. *Case Earliest Date is the earliest of the clinical date (related to illness or specimen collection and chosen by a defined hierarchy) and the Date Received by CDC. The date for the current week extends through Saturday. ^The death rate for Texas during the week ending Jun 25, 2022, are reflective of a data reporting artifact.

Source: CDC COVID-19 Case Line-Level Data, 2019 US Census, HHS Protect; Visualization: Data, Analytics & Visualization Task Force and CDC CPR DEO Situational Awareness Public

There are several ways to prevent the spread of viral infectious diseases (including COVID-19), e.g., vaccination, wearing masks, washing hands, and social distancing. In combination with hygiene and behavior, vaccination is the most effective method for reducing viral infection and dissemination, and the severity of the disease. Creating herd immunity by vaccinating the majority of the population is considered the most effective method of combating viral infections like COVID-19. However, even the most effective vaccine will be ineffective if it is not administered at high rates. The World Health Organization (WHO) reported vaccine hesitancy as one of the top ten global health problems even before the COVID-19 pandemic started. Vaccine hesitancy refers to "...the reluctance or refusal to vaccinate despite the availability of vaccines".⁹

Study Objective

Thus, this study conducted a literature review to understand and identify the predictors of COVID-19 vaccine hesitancy in South Asian Americans in the US. This was done to understand if the high disparities seen in COVID-19 mortality and morbidity also exist in the area of vaccine hesitancy for these communities.

METHODOLOGY

Study Design

This study conducted a search of peer-reviewed articles in electronic and public databases such as PubMed and Google scholar. Databases like these yielded very limited number of articles on South Asian Americans. For example, a quick search on PubMed illustrated this paucity (accessed 8/30/23):

COVID-19 vaccine hesitancy in US (560 results)

- “ ” ” in South Asian American (2 results)
- “ ” ” in Asian American (34 results)
- “ ” ” in Native Hawaiian/Pacific Islander (3 results)
- “ ” ” in African American (34 results)
- “ ” ” in Hispanic/Latino (25 results)
- “ ” ” in American Indian/Alaska Native (2 results).

Thus, this review also searched journals and websites that focused on South Asian American and Asian American healthcare issues. The review process was as follows: read the abstracts (180 articles), read the full text (85 articles), met all the inclusion criteria (33 articles), highlighted South Asian Americans (6 articles).

Search Terms and Inclusion-Exclusion Criteria

The key search terms were:

- COVID-19 vaccine hesitancy in US, South Asian American.
- Asian Indian, Bangladeshi American, Nepalese American, Filipino American, Asian American, African American, Hispanic/Latino – these terms were added as very few articles were found using only the phrase “South Asian American”.

The inclusion criteria were:

- Studies that investigated COVID-19 vaccine hesitancy in US.
- Cross-sectional studies and surveys.
- Articles published during January 2020 to August 2023.

The exclusion criteria were:

- Studies published in a language other than English.
- Preprint articles with no evidence of a peer review process.
- Review articles and narratives.

FINDINGS

The US public's stance towards COVID-19 immunization was complex and influenced by many factors. Many studies were available on COVID-19 vaccine hesitancy in the US. However, only a few were available on South Asian Americans. Since there were so few articles on South Asian Americans (and even Asian Americans), this review also explored predictors of vaccine hesitancy in other communities of color (e.g., African Americans, Hispanic/Latino Americans) who share some similar traits such as co-morbidities (e.g., high diabetes, hypertension).

Factors Contributing to COVID-19 Vaccine Hesitancy in South Asian Americans

- Concerns about vaccine safety (side effects)¹⁰
- Lack of access to healthcare (e.g., linguistic barriers)¹¹

One study from Michigan reported that South Asian Americans (sample included Asian Indian, Bangladeshi, Burmese) had more concerns about vaccine safety compared to East Asian Americans or South East Asian Americans.¹⁰ One study from New York City reported that 25% of Asian Americans had not received one or more doses of the COVID-19 vaccine. Their disaggregated data showed that more Bangladeshi Americans (47%) and Nepalese Americans (87%) had not received one or more doses of COVID-19 vaccine. 34% Asian Americans faced language barriers (e.g., need for interpreter, translated materials) during COVID-19. Wait time for an interpreter for Bangladeshi Americans were the highest (65%) and filing for unemployment for Nepalese Americans were the highest (68%). For these communities it was lack of access rather than vaccine hesitancy in not getting vaccinated.¹¹ Another study reported that women and older Asian Americans were more vaccine hesitant. This study included Asian Indians but lumped them into “Other/Mixed Culture” because of small sample size.¹²

Factors Contributing to COVID-19 Vaccine Hesitancy in Other Communities of Color in the US

The factors contributing to COVID-19 vaccine hesitancy in other communities of color were:

1. Concerns about vaccine safety (side effects) and efficacy^{13,15-18,20,25,28}
2. Lack of access to healthcare^{13,23}
3. Socio-demographic characteristics:
 - Race/ethnicity - African American, Hispanic/Latino, Native Hawaiian, Pacific Islander, American Indian/Alaska Native¹³⁻²⁸
 - Education - low/less than bachelor's degree^{14,16,18-21,27,28}
 - Household income - low^{17-19,23,27,28}
 - Gender - women^{13,21,23,27}
 - Age - young people^{13,20,21}
 - Residence - rural^{19,28}
4. Communication and Social media's influence
 - Social media's negative influence^{15,23,26,28-33}
 - Lack of messaging from medical community/primary care physicians^{16,21}
5. Lack of trust in government/government resources^{14,15,17,20,22,25}
6. Political bias - Conservative/Republican^{13,19,27}
7. Pre-pandemic factors^{14,27}
 - Adherence to general immunization
 - Historical biomedical and healthcare-related mistrust

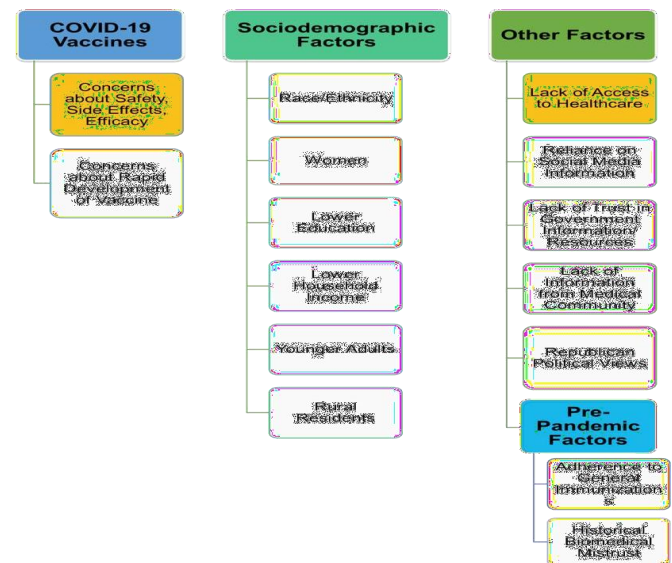


Figure 2: Factors contributing to COVID-19 Vaccine Hesitancy in South Asian Americans (orange boxes)

Concerns about COVID-19 Vaccine Safety and Efficacy

There were a lot of concerns about the safety and/or efficacy of the COVID-19 vaccines in African Americans and Hispanic/Latino Americans. These were due to: lack of faith in the scientific endeavors, their expedited development (too rushed, research cut corners on testing safety/efficacy), "Operation Warp Speed" nomenclature, anti-vaccine propaganda campaigns, negative rumors, misinformation, autism, etc.

The concerns about the side effects were: whether they are temporary, would they get sick from the live coronavirus in the vaccine, would it effect pregnant women, etc.

Lack of Access to Healthcare

Lack of access to healthcare also led to lower vaccination rates. These were: insufficient public transportation, cost, lack of flexibility in working hours (for those from low income households), and lower access and interaction with healthcare professionals.

Socio-demographic Factors

Many socio-demographic characteristics were associated with COVID-19 vaccine hesitancy.

Race/ethnicity

African Americans and Hispanic/Latino Americans reported much higher levels of vaccine hesitancy compared to Whites in the US.

Lower Education (less than bachelor's degree)

Lower education (less than bachelor's degree) was associated with more vaccine hesitancy due to more COVID-19 vaccine apprehension and less understanding of vaccine-related scientific investigations.

Lower Household Income

Respondents from lower-income backgrounds were less likely to get vaccinated than higher income households. Lower income people were more anxious about missing work, and vaccine shots were less accessible in low-income regions.

Gender - women

Women were more likely than men to postpone or refuse the COVID-19 vaccines. Their reasons were: the vaccine was too new, afraid of adverse effects, and negative impact on fertility and pregnancy (COVID-19 vaccine clinical trials had excluded pregnant and breastfeeding women).

Age – younger people

The COVID-19 vaccine hesitancy was higher in this demographic group than any other age groups. Young people were often healthier and had fewer fears of COVID-19-related illnesses and deaths.

Rural Residents

COVID-19 vaccine hesitancy was higher in rural areas than in urban areas. Rural residents believed their risk of exposure to COVID-19 was lower than urban residents due to lower population density and less use of public transportation. Rural residents also thought that the severity of COVID-19 had been exaggerated.

Political Bias – Conservative/Republican

More vaccine hesitancy was seen in conservative/Republican voters compared to liberal/Democratic voters. Conservatives/Republicans did not feel COVID-19 was a big concern.

Communications and Social Media's Influence

Many studies reported that people relied on social media for their COVID-19 information including COVID-19 vaccines (e.g., Facebook, Twitter, Instagram, Snapchat, TikTok, YouTube, etc.). One study reported more than 400 anti-vaccine accounts on these social media platforms with 58 million followers (most of whom live in the US). Another study reported that less than 10% information on social media was from the medical community. Reviews of Twitter and Facebook posts showed numerous posts related to COVID-19 that were: anti-vaccine, false information, conspiracy theories, and anti-government. A study mentioned the influence (positive and negative) of prominent public figures on people's attitudes about getting vaccinated. Most of these studies did not analyze by race/ethnicity but were considered important in the vaccine hesitancy discussions.

Lack of Messaging from Medical Community/ Primary Care Physicians

People mentioned that their vaccine hesitancy was also related to not hearing any unified message from the medical community or their primary care provider physicians early in the pandemic. PCPs were not included in the early vaccination discussions.

Lack of Trust in Government/Government Resources

The historical impact of systematic racism and the unfavorable experiences encountered by ethnic minorities (particularly African Americans) in the healthcare system also lead to COVID-19 vaccine hesitancy. There has also been concern about the inadequate or lack of inclusion of ethnic minorities in clinical trials. Social media platforms promoted anti-government messaging.

Pre-pandemic Factors

There is a strong correlation between COVID-19 vaccine hesitancy and: adherence to general immunization and historical biomedical and healthcare mistrust.

RECOMMENDATIONS

The factors contributing to vaccine hesitancy in South Asian Americans were: vaccine safety concerns and lack of access to healthcare. Many other predictors (along with these) were found in other communities of color in the US, e.g., socio-demographic factors (low education, low income, women, younger people, rural residence, Republican political affiliation), social media's influence, lack of trust of government, and pre-pandemic factors.

Although vaccine hesitancy usually diminishes over time as more and more people take it, implementing some immediate strategies will expedite vaccine acceptance faster. For example,

- Develop health education/messaging programs for South Asian Americans with culturally and linguistically appropriate information about the benefits of vaccination.
- Include social media influencers early in messaging strategies.
- Invest more on research studies on South Asian Americans to find which other factors also affect these communities. It is important to find out if the numerous factors associated with COVID-19 vaccine hesitancy seen in other communities of color are also seen in South Asian Americans.
- Predictors identified in other communities of color may be used as proxies till direct data are available. However, this is not a long term solution.
- There should be more research on social media's use that included socio-demographic variables.
- Engage multiple sectors (government, private, non-profit, faith, civil society – in health, medical, economy, environment) and leverage knowledge, expertise, reach and resources, and benefit from their combined and varied strengths.

CONCLUSIONS

Vaccine hesitancy in South Asian Americans exist and should be addressed just like in every other community of color in the US. Such information is very much needed by policymakers and health programmers to raise awareness about the need for vaccines, increase vaccination rates, find strategies for overcoming vaccine hesitancy and achieving equity in COVID-19 vaccination, and keep reducing morbidity and mortality from COVID-19.

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