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## Introduction

Black and Brown communities have been disproportionately affected by COVID-19 in comparison to other race/ethnic groups due to their increased susceptibility to infection and virus complications<sup>1</sup>.

Risk for COVID-19 Infection, Hospitalization, and Death By Race/Ethnicity

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Rate ratios compared to White, Non-Hispanic persons	American Indian or Alaska Native, Non-Hispanic persons	Asian, Non-Hispanic persons	Black or African American, Non-Hispanic persons	Hispanic or Latino persons
Cases <sup>1</sup>	1.7x	0.7x	1.1x	1.3x
Hospitalization <sup>2</sup>	3.7x	1.0x	2.9x	3.1x
Death <sup>3</sup>	2.4x	1.0x	1.9x	2.3x

Protective protocols have been implemented, such as vaccine development, to reduce disease transmission.

**Vaccines:** Currently three vaccines are available to be administered with many more in development. Prioritizing vaccine administration to vulnerable populations should include Black and Brown communities.

**\*Black and Brown= African Americans and Latinos/Hispanics**

## Study Objectives

This literature review aims to discuss the hesitancy and apprehension behind Black and Brown community's COVID-19 vaccine behaviors.

Special attention is paid to

1. The communities' vulnerability to the virus due to existing comorbidities and the social determinants that influence them.
2. The historical context of medical manipulation and harm within the community leading to distrust in science and research.

Also, an exploration of multilevel factors influencing vaccine behaviors using the Social Ecological Model (SEM).

Lastly, a discussion on strategies to increase vaccine uptake in Black and Brown communities highlighting the use of public outreach campaigns via public health experts opposed to political figures.

## Methods

Information was collected from various sources:

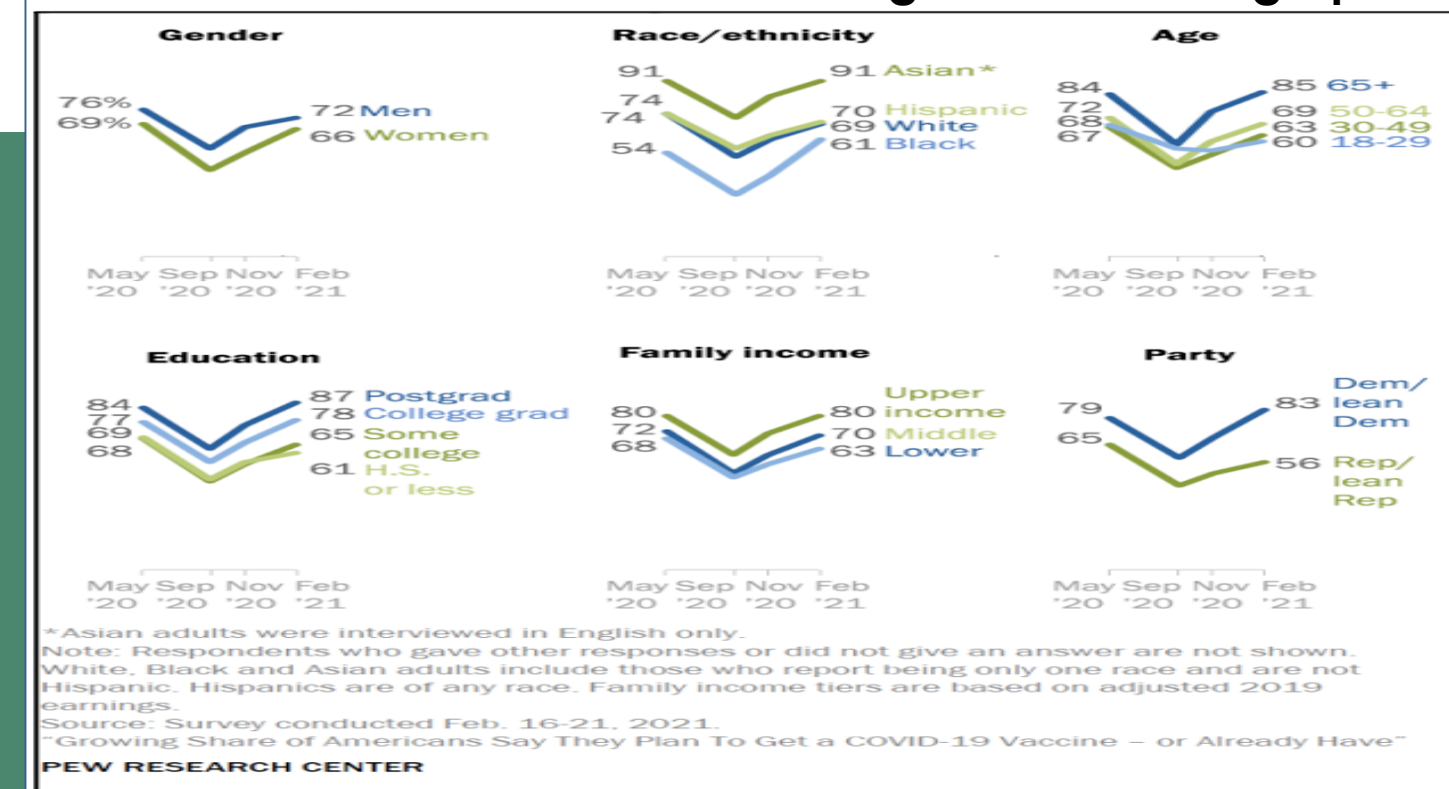
- COVID-19 statistical information on number of confirmed cases/hospitalizations/deaths and vaccine roll-out plans came from CDC, WHO, and Pew Research Center.
- Peer-reviewed articles using databases, Google Scholar, PubMed, and Science Direct with search terms such as : COVID-19 vaccines, vaccine perceptions in Black and Brown communities, vaccine hesitancy/ reluctance.
- Glanz's SEM Model focusing on the levels: individual, interpersonal and community

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## COVID-19 Vaccine Intentions among diverse demographics<sup>2</sup>



## Social Ecological Model (SEM)

**Individual Level:** Behavior change concerns a person's knowledge, attitudes, and beliefs<sup>3</sup>. Literature review highlighted the following factors:

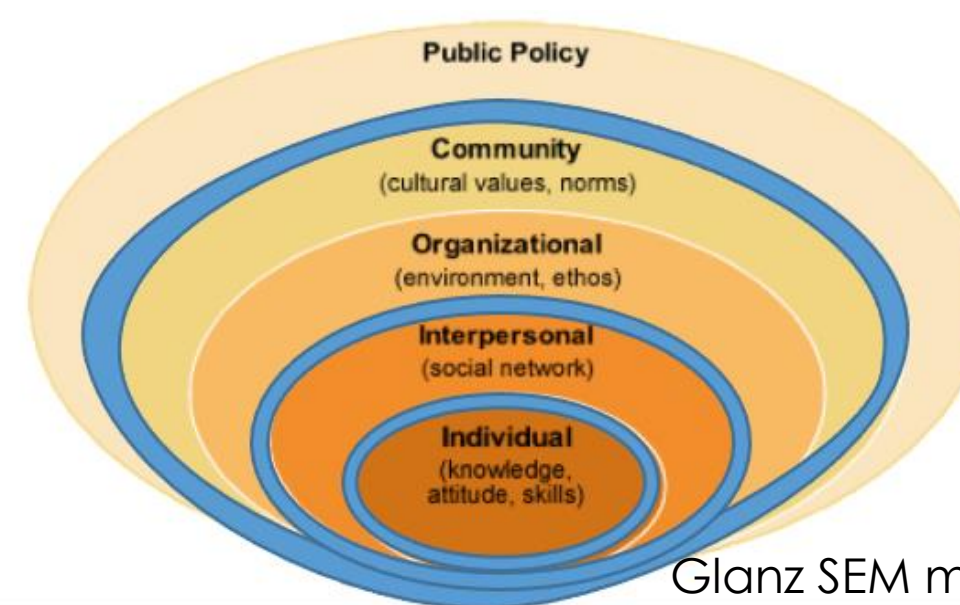
- Health Literacy<sup>4</sup>
- Lack of COVID-19 knowledge around vaccines<sup>4</sup>
- Lack of awareness around COVID-19 risk for infection<sup>4</sup>
- Lack of preparedness, not engaging in COVID-19 preventive behaviors<sup>4</sup>
- History of comorbidities<sup>5</sup>

**Interpersonal Level:** Social networks via familial or platonic relationships are influential to vaccine behaviors in Blacks and Browns.

- Importance of family and friends willing to be vaccinated<sup>6</sup>.
- Lack of communication with providers around COVID-19 vaccines<sup>6</sup>.
- Personal trust in COVID-19 information sources<sup>6</sup>.

**Community Level:** Cultural values and norms are also influential on health behaviors.

- Alternatives to conventional medical treatments<sup>7</sup>.
- Prayer is accepted as a folk remedy<sup>7</sup>.
- Online communities and social media – role of misinformation<sup>3</sup>
- Historical and contemporary medical mistrust<sup>8</sup>
- Stigma<sup>9</sup>



Glanz SEM model, 2016

## Discussion

### Strategies for Increasing Vaccine Uptake

Increasing vaccine uptake requires building trust with these communities by enlisting informational, social norms change, and vaccine accessibility strategies.

- **Information strategies:**
  - "NYC, Let's talk COVID!", digital video series presenting current and easily comprehensible COVID information<sup>10</sup>.
  - Video topics including testing, vaccine science and distribution, and mental health advice<sup>10</sup>.
  - Educate/inform New Yorkers with expertise from public health leaders<sup>10</sup>.
- **Strategies for changing social norms:**
  - Shift perceived norms in the community with messages embraced within social networks to get vaccinated<sup>11</sup>.
  - Utilize influencers to shift these perceptions<sup>11</sup>.
  - Increasing confidence in ample testing among individual's own racial/ethnic group as it relates to vaccine intentions and enthusiasm<sup>12</sup>.
- **Vaccine access strategies:**
  - Collaborating with partners with existing relationships<sup>13</sup>
    - Community-based/cultural organizations
    - Community health workers
    - Faith-based organizations

## Conclusion

Modifying Black and Brown communities' COVID-19 vaccine behaviors requires understanding their apprehensions influenced by their attitudes and beliefs, cultural norms, and their historical mistreatment by science and medical systems. There needs to be special consideration to the communities' increased COVID-19 vulnerability due to pre-existing comorbidities and the social determinants that shape them. Finally, increasing vaccine uptake in these communities requires trust that vaccines serve as protective measures opposed to harmful intents.

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