

No Booster for Us! An Understanding of HBCU Students' COVID-19 Booster Vaccine Hesitancy

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Abstract

This exploratory study examines COVID-19 booster vaccine hesitancy among African American college students at a four-year Historically Black College and University (HBCU) in Maryland. Although limited in scope, this research has implications for students at other HBCUs because of the shared history and culture of the “Black experience” in the United States. The study was conducted using focus groups. Key findings lie in the areas of self-efficacy, gender, and health status couched in the context of African Americans’ generational distrust of government and science to serve their best interests. In terms of self-efficacy, the students stated by taking the initial vaccines, they had done enough to ward off severe COVID-19. A concern by gender was voiced about purported side effects of the vaccine experienced from the initial doses. Certainly, as with many young adults of all races, the students in the study had a sense of invincibility regarding their health. Overall, the findings indicate that government and health organizations need to work more purposively by listening to the young African Americans they seek to serve. This in turn could lead to the creation of more effective health messages to reach demographics and communities who view themselves as outliers from the larger society.

Keywords: COVID-19, Vaccine Hesitancy, Booster Vaccine, Health Communication, Minority Health, HBCU

1. Introduction

The COVID-19 pandemic in the United States has been uncovering severe health disparities in historically marginalized populations. According to the Centers for Disease Control and Prevention (CDC), racial minorities have higher rates of infection cases, hospitalization, and fatalities than White, non-Hispanic persons (CDC, 2022b). Moreover, minority groups have been hit hard by the pandemic, with 61% of African Americans concerned about the loss of income related to the current pandemic (NAACP, 2022). Although the U.S. government recommends everyone stays up to date with COVID-19 vaccines including boosters, COVID-19 booster vaccination rates for African American groups are still low (CDC, 2022c). As of March 30, 2022, only 38.8% of African Americans got the first dose of the booster and 22.7% got the second dose of the booster vaccination. The World Health Organization (WHO) describes vaccine hesitancy as “the reluctance or refusal to vaccinate despite the availability of vaccines – threatens to reverse progress made in tackling vaccine-preventable diseases” (WHO, 2019).

There may be a variety of aspects that are responsible for the low rate of vaccination among African Americans. The first reason for vaccine hesitancy in African Americans may be government distrust. Multiple researchers reported that significantly more African Americans mistrusted the government, as compared to other racial and ethnic groups. (Hildreth & Alcendor, 2021; Purnell et al., 2022; Razai et al., 2021; Troiano & Nardi, 2021; Willis et al., 2021). Another reason may be misinformation about COVID-19 vaccines. Some African American adults still have a skeptical view about the effectiveness of the vaccines, and they also have a fear of negative side effects (Moye et al., 2021; Williams & Mohammed, 2013; Willis et al., 2021).

The emerging literature on vaccine hesitancy has focused on the general concerns of vaccine hesitancy among historically marginalized populations, but only a few studies have focused on vaccine hesitancy in Historically Black Colleges and Universities (HBCUs). Also, this research is the first attempt to explore COVID-19 booster vaccine hesitancy among students at HBCUs.

2. Method

2.1 Study Description

This qualitative study used focus groups to explore African American students' perspectives and beliefs about COVID-19 booster vaccination and the specific aims of the study were to (a) explore social, cultural, and personal aspects associated with the COVID-19 vaccine and COVID-19 booster vaccination; and (b) compare beliefs and attitudes toward COVID-19 booster vaccination. The reason for using focus groups was that African American students' dynamic and interactive nature would produce higher quality and more complete data than interviews. Accordingly, each group was facilitated by a moderator and captured all discussions through audio recorders.

2.2 Data Collection and Procedure

After approval of the university's institutional review board for the protection of human subjects, participants were recruited through fliers that were posted on notice boards on February 1st, 2022 at Morgan State University in Baltimore, Maryland. Morgan State University was founded in 1867 and it is the largest historically black university in Maryland with approximately 9,100 undergraduate and graduate students.

A description of the desired participants and contact information were included in the fliers. All participants signed an informed consent form and completed a demographic data sheet after the semi-structured focus-group interview. Participants were asked to talk about their experiences in the following three areas: (a) COVID-19 personal experience, (b) COVID-19 vaccine side effects, and (c) opinions about COVID-19 booster vaccines.

Nineteen African American students ages 19 to 23 years with a mean age of 20.8 ($SD = 1.31$) participated in three focus group interviews, of which 42.1% were males ($N = 8$) and 57.9% ($N = 11$) females. Except for age and gender, participants did not differ significantly on sociodemographic variables including annual family income, religious affiliation, and marital status. The demographic characteristics of the participants in each group are shown in Table 1.

Table 1. Demographic Characteristics of Participants in Focus Groups ($N=19$)

| Group | Participant's ID | Age | Gender | Major |
|-------|------------------|-----|--------|--------------------------|
| 1 | p ¹ | 19 | Female | Business Administration |
| | p ² | 23 | Male | Strategic Communication |
| | p ³ | 21 | Female | Social work |
| | p ⁴ | 22 | Male | Chemistry |
| | p ⁵ | 20 | Male | Architecture |
| | p ⁶ | 19 | Female | Social work |
| 2 | p ⁷ | 19 | Female | Sociology |
| | p ⁸ | 23 | Male | Multimedia Journalism |
| | p ⁹ | 22 | Female | Economics |
| | p ¹⁰ | 21 | Female | Psychology |
| | p ¹¹ | 22 | Male | Civil Engineering |
| | p ¹² | 21 | Female | Strategic Communication |
| | p ¹³ | 19 | Male | Multiplatform Production |
| 3 | p ¹⁴ | 20 | Female | Business Administration |
| | p ¹⁵ | 21 | Male | Multiplatform Production |
| | p ¹⁶ | 22 | Female | History |
| | p ¹⁷ | 20 | Female | Multimedia Journalism |
| | p ¹⁸ | 20 | Male | Sociology |
| | p ¹⁹ | 22 | Female | Chemistry |

2.3 Data Analysis

Audio recordings were transcribed and examined for accuracy. Interviews were transcribed by researchers by first reading the transcripts independently with the written notes. Then, the text was read again to sort important data and highlight key information. After that, the text was reviewed to confirm or disconfirm emerging relationships and to identify preliminary themes. Using an iterative process, these themes were discussed, and a preliminary codebook was developed. Finally, researchers created a matrix of themes and subthemes on one axis and three focus groups on the other and compared similarities and differences across the groups.

3. Results

Researchers identified three interrelated themes: self-efficacy, gender, and health status. These three aspects work independently and interdependently, influencing COVID-19 booster vaccine hesitancy. The first self-efficacy is the psychological aspect influencing African American students’ willingness to get the COVID-19 booster vaccination. The remaining two, gender and health status are personal aspects affecting hesitance to get the COVID-19 booster vaccination. The themes of this research are shown in Table 2.

Table 2. Ecological Sentence Synthesis of HBCU Student’s Perceptions of COVID-19 booster vaccine

| Point of View | | Opinions About COVID-19 Booster Vaccine |
|----------------------|----------------------------|---|
| Psychological aspect | Self-efficacy | I don’t think I need more vaccine shots because I am so confident to control COVID symptoms. To be honest, I do not worry about COVID anymore because I am strong enough to handle COVID. |
| | Gender-based side effect | When I completed the second shot of Moderna, my period changed. My sister also got the second shot the same day, and her period also changed. We are fine now, but we are so scared to get any more booster shots. I heard women experienced more severe side effects after the COVID vaccine. |
| Personal aspects | Reduced perceived benefits | I know the vaccine might reduce the symptoms, but I got COVID twice. Now, I think I have lots of antibodies after these COVID infections. So, I believe I don’t need to get more booster shots. I don’t want to get any more shots because I am not at high risk of getting sick from COVID. |

3.1 Self-Efficacy

Self-efficacy is the situation-specific confidence level that people possess to engage in healthy behavior across different challenging or high-risk situations. Self-efficacy affects how people feel, think, and act regarding risk-taking behaviors (Bandura, 1977; Wong & Yang, 2020). Most African American students in this study mentioned that they could control COVID-19 symptoms because all students already completed the COVID-19 vaccine primary series. According to CDC, a primary series refers to the initial dose(s) of the COVID-19 vaccine (CDC, 2022a). For Pfizer and Moderna mRNA vaccines, the primary series is two vaccine doses. For the Johnson & Johnson (J&J) COVID-19 vaccine, the primary series is a single vaccine dose. The following excerpts from the conversation between the two students convey this: “I completed two shots of the vaccine last year, and I think I am still fully vaccinated. I don’t think I need more vaccine shots because I am so confident to control COVID symptoms.” (P⁸), “I got two shots last year and I think it’s enough to manage COVID infection. To be honest, I do not worry about COVID anymore because I am strong enough to handle COVID. Also, we do not have to wear a mask anymore and I think it is a clear sign of endemic.” (P¹⁷)

Other students also strongly agreed with this view and mentioned that they no longer need to get the COVID-19 booster vaccine, and they mentioned they have enough confidence to manage COVID-19 conditions. Some of the students in the study said that they frequently visit COVID-19 information websites, such as the CDC and Maryland Department of Health’s COVID dashboard.

3.2 Gender-Based Side Effects and Reduced Perceived Benefits

Both gender-based side effects and reduced perceived benefit played another key role in COVID-19 booster

vaccine hesitancy. Most female students were concerned about the side effects of the COVID-19 booster vaccine. This recognition primarily came from experiencing changes in their physical condition when they completed the COVID-19 vaccine primary series. One of the female students said, “When I completed the second shot of Moderna, my period changed. I found this symptom is one of the side effects of vaccines. My sister also got the second shot the same day, and her period also changed. We are fine now, but we are so scared to get any more booster shots. It was a horrible experience.” (P¹²)

Another female student experienced a severe headache after completing the COVID-19 vaccine primary series. In contrast, most male students never experienced severe side effects from the vaccine, but they were also not willing to get the COVID-19 booster vaccination. One of the male students said, “It’s simple and logical. I don’t want to increase the chance to face side effects from the vaccine. I don’t want to get any more booster shots.” (P²)

Some students had increasing concerns not only for their health but also for family members. One student has decided to stop getting more vaccines because his mother’s health condition was significantly worse after the second dose of the COVID-19 vaccine primary series. Furthermore, he changed his perception of the COVID-19 vaccine. He said, “I heard women experienced more severe side effects after the COVID-19 vaccine. We had a bad experience after my mom’s second shot of Moderna. She had a crazy headache and couldn’t walk for almost two days. Before that, I trusted the vaccine could be a game changer. But I changed my mind. That’s because I saw the side effects of the vaccine, and now I am very skeptical about the vaccines.” (P¹¹)

Reduced perceived benefits: perceived benefits are defined as an individual’s beliefs about being vaccinated. It relates to the Health Beliefs Model and determines whether or not individuals believe vaccination will decrease the chance of infections or other complications (Wong et al., 2020). Although all students in the study completed the COVID-19 vaccine primary series, there were students who contracted COVID-19 before the interview. These students mentioned that the vaccine could not protect them effectively as they still contracted the disease even having received the full series. Furthermore, most students believe having received the vaccine series as well as the contraction of COVID -19, they did not need to get COVID-19 booster vaccination as it would not offer any more protection beyond the antibodies they now have in their bloodstream. The following excerpts are from the conversation between two of the participants: “I got COVID twice after the second shot of Pfizer. But the symptoms were very mild, and I worked remotely without any problems. I know the vaccine might reduce the symptoms, but I got COVID twice. Now, I think I have lots of antibodies after these COVID infections. So, I believe I don’t need to get more booster shots.” (P³), “I don’t want to get any more shots because I am not at high risk of getting sick from COVID.” (P⁶)

4. Discussion

The COVID-19 pandemic continues to be an ongoing threat that has necessitated the development of a vaccine to combat its effects, to reduce illness, hospitalization, and death. With African Americans being vaccinated at lower rates when compared to other groups, the study aimed to elucidate reasons for COVID-19 booster vaccine hesitancy among students at HBCUs. This study is the first to look at this phenomenon from this perspective. From the study’s findings, though exploratory, results seem to be consistent with other authors that have posited that African Americans have a high hesitancy when it comes to COVID-19 vaccines and COVID-19 booster vaccines (Sharma et al., 2021; Batra et al., 2022). None of the participants in the study indicated that they were prepared to get a COVID-19 booster vaccine.

This study focused on college students in the Northeast region of the United States. Studies on vaccine hesitancy found that vaccine hesitancy and booster vaccination hesitancy was more prevalent among younger African Americans, particularly those living in the Northeast region of the United States where this study was conducted (Batra et al., 2022). While age was not a theme in this research, as the study concentrated on college students which constitutes a younger population, these previous findings may be worthwhile in understanding the responses received in the study.

The main concerns for participants’ hesitation in receiving a COVID-19 booster were: (1) Self-Efficacy - the belief that the vaccine series received was adequate to build immunity, resting also on the belief that they are young and strong enough to ward off COVID-19 and did not need a booster. This was mentioned in a prior study by Sharma et al.’s (2021) research, who posits that younger generations have a preconceived notion of being ‘invincible’ and a belief of being tough. (2) The belief that the vaccine booster will be inefficient and not beneficial beyond the antibodies already in their systems. Students indicated that they still got COVID-19 even after taking the full series and as such, did not have confidence that another dose by way of a booster would be of any value. This notion is quite common for vaccine hesitancy in general, where individuals believe that the vaccine is not as efficient and thus are skeptical (Troiano & Nardi 2021; Ruiz & Bell, 2021). (3) Perceived side effects by females: One of the

main concerns in the study was the side effects that were reported by female participants of the study. Students were concerned about the prior side effects such as changes in their menstrual cycle or that of family members. Even male participants, while they had not reported any side effects, expressed concern based on firsthand experience of family members who were females and had experienced some form of side effect. This has caused a large hesitancy in intention to receive the third dose of COVID-19 booster from the study participants. COVID-19 vaccines have been reported to impact menstrual cycles by many females globally, which has prompted a further investigation into the issue. The present study's finding is in line with a recent study published by Muhaidat et al. (2022), looking at menstrual symptoms after COVID-19 vaccination in a large sample of women. The authors found that 66% of study participants experienced menstrual abnormalities after COVID-19 vaccination. Symptoms were mostly associated with longer periods and longer cycles. However, like the participant in this study, the authors indicated that symptoms were resolved within two months in more than 90% of the women. This study has shown that students are not willing to get COVID-19 boosters due to various factors and if we want to change this perception targeted intervention should be actioned.

5. Implications

This study, though exploratory in nature provides crucial information regarding COVID-19 booster vaccination hesitancy among students in HBCUs. This study invites conversation around the prevalence of vaccine hesitancy among college-aged African Americans. To get students to understand the need and see the advantage of getting a booster dose, greater communication may need to be targeted at helping students to understand the safety, benefits, and advantages of getting a booster vaccination. The CDC highlighted the fact that side effects from booster vaccination are rare when compared to the second primary series. These health communications should be done from an evidence-based perspective through a cultural lens, and students should be made aware of the possibility of new variants that may arise. It should also be made known that immunity wanes over time from the vaccine series and thus a booster vaccine may be necessary for continued immunity. Because many places have now relaxed requirements for COVID-19 safety, such as the removal of mask-wearing, and the removal of the social distancing rule, many students believe the risk of COVID-19 is no longer relevant. There should be a robust health communications effort on college campuses to help educate students on these various factors. Resources can be increased to provide easy access to COVID-19 boosters, for example, in the early days, there were vaccination sites set up on campus for all students, faculty, and staff to get vaccines. This was done as vaccination was mandatory to return to campus. This should be considered for boosters and be advertised similarly to how communication was done for full campus vaccination compliance. While students do not need to receive COVID-19 booster vaccines, communications should stress that it is highly recommended and educate students as to why.

Behavioral confidence needs to be built to reduce vaccine hesitancy. When behavioral confidence is increased vaccine hesitancy is reduced. Behavioral confidence describes an individual's sureness to properly follow through with receiving the vaccine despite obstacles (Sharma et al., 2021; Batra et al, 2022). The authors indicated it should be a critical part of health promotion activities for vaccine-hesitant individuals including college students. Campus health officials may send targeted communication via text messages regarding booster vaccines in a similar way as how communications are sent. They can also use the university's website, and social media, as well as other university avenues such as the university health center. Policymakers can also impact behavioral confidence by constant reminders showing the benefits of getting boosted and dispelling misinformation from the many myths. Other actions that can impact behaviors include using peers or individuals that serve as influencers to engage in advertising and health communications. There continues to be a challenge regarding booster uptake in general; however, it is even more so among the African American population.

6. Limitations and Future Studies

There are a few limitations of the study that need to be mentioned. First, this study is exploratory and used only 19 participants. Future studies may consider using a larger sample by way of quantitative analysis. Second, the sample was from only one HBCU, this may not be generalizable to other HBCUs. Further, one study found that booster vaccine hesitancy was higher in states in the Northeast region of the country; this may not be the case in other areas. Additionally, future studies may engage in a deeper probe focusing on factors that may impact vaccine booster hesitancy. Studies on booster hesitancy, in general, were limited and there were none that could be found for college students regarding booster uptake. It would be worthwhile for researchers to consider various studies of this group and topics to boost literature in the area.

Competing Interests Statement

The authors declare that there are no competing or potential conflicts of interest.

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