

# Minority Healthcare Workers' Perception of Safety and COVID-19 Vaccination Uptake



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## INTRODUCTION

Minority populations have suffered the worst burden from the ongoing COVID-19 pandemic.<sup>1–3</sup> Healthcare workers have been on the frontline of this pandemic, making minority healthcare workers serving minority populations at a substantial risk. Healthcare workers were a priority group for the COVID-19 vaccination roll out. However, vaccination hesitancy is prevalent among minority populations. In this cross-sectional study, we examined the perception of safety among healthcare workers in a minority serving institution and evaluated their uptake of COVID-19 vaccination.

## METHODS

A COVID-19 vaccination program (Pfizer–BioNTech) was implemented for all employees in Howard University Hospital, a minority serving institution in Washington DC from December 2020 to March 2021. Our facility serves a predominantly urban minority population with approximately 78% blacks, 20% Hispanics, and 2% other race-ethnicities. Employees were encouraged, but not mandated to get vaccinated for COVID-19. We distributed 300 anonymous paper surveys to employees throughout the hospital from March 23, 2021, to March 26, 2021, and inquired about safety in the context of the ongoing COVID-19 pandemic. We also evaluated COVID-19 vaccination uptake. We used logistic regression models to investigate factors associated with receipt of COVID-19 vaccine (outcome).

## RESULTS

A total of 277 employees responded to the survey (response rate = 92.3%). The mean age of the respondents was 42.2 years (SD = 13.8). Respondents were 68.1% female, 74% blacks, 12.3% Asians, 7.4% Hispanic, 3.4% whites, and 3% other races; 77.7% were college graduates; and 84.8 spoke English as their primary language. Physicians constituted

22.7% of the respondents, 28.6% were nurses, 12.1% were administrative staff, 4.4% were technicians, and 32.2% were other personnel such as housekeepers, transport personnel, and food service personnel. Although 80.1% of respondents were afraid that they may get COVID-19 infection, only 14.3% considered changing career because of COVID-19. Overall, 79.6% respondents felt safer than a year ago when the pandemic started but only 48.7% felt as safe as pre-COVID-19 pandemic. Availability of personal protective equipment (PPE) 94.6%, COVID-19 vaccination 89.7%, and improved public awareness 84.3% were the top reasons for feeling safer. However, only 207/269 (77%) of respondents got COVID-19 vaccination. Vaccination rates were 93.6%

**Table 1 Factors Associated with The Uptake of Covid Vaccine among Healthcare Workers**

Characteristics of healthcare workers, n (%)	Had COVID-19 vaccine, n (%)	Multivariate OR (95% CI)
Age		
Less than 40 years	86 (72.3)	Reference
40 years and older	101 (82.1)	2.90 (1.24–6.81)
Sex		
Male	72 (83.7)	Reference
Female	134 (73.6)	0.88 (0.36–2.19)
Race		
Non-Blacks	58 (84.1)	Reference
Blacks	145 (75.5)	0.36 (0.13–1.01)
Marital status		
Unmarried	91 (68.9)	Reference
Married	105 (86.1)	1.75 (0.72–4.29)
Job description		
Doctors	58 (93.6)	Reference
Nurses	62 (79.5)	0.24 (0.05–1.03)
Technician	7 (63.6)	0.12 (0.01–0.98)
Administrative personnel	22 (71.0)	0.19 (0.03–1.10)
Others <sup>a</sup>	55 (66.3)	0.20 (0.05–0.89)
Highest education		
Less than college	29 (50.9)	Reference
College graduate	171 (83.8)	4.87 (1.86–12.73)
Primary language spoken		
Non-English	26 (66.7)	Reference
English	173 (80.1)	4.93 (1.75–13.86)

<sup>a</sup>Others included housekeepers, transport personnel, and food service personnel  
Multivariate adjusted for age, sex, race, education, marital status, primary language spoken, and job description.

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among physicians, 79.5% among nurses, 71% among administration personnel, and 63.6% among technicians. We noted that those who felt safer because of availability of vaccine were more likely to get COVID-19 vaccine 86.7% versus 31.8%,  $P < 0.001$ . In multivariate analysis, respondents who were older than 40 years of age, those with college degrees, and those who spoke English as their primary language were more likely to be vaccinated but blacks and technicians were less likely to be vaccinated (Table 1).

## DISCUSSIONS

Our study showed that minority healthcare workers are feeling safer one year into the COVID-19 pandemic, but approximately one out of every four healthcare workers did not take the COVID-19 vaccine even when they had access to it. There is a need for better education among minority healthcare workers on the frontline to take necessary safety precautions including COVID-19 vaccination.

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### Declarations:

This research was approved by the institution review board of Howard University, Washington DC (IRB-21-MED-18).

**Conflict of Interest:** Dr Anand Deonarine has stocks in Pfizer and Moderna. Other authors have no potential interests to declare.

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