Missed opportunity, the unseen driver for low COVID-19 vaccination rates in underserved patients

Authors:
Tania Campagnoli, MD MSc[1]
Geetika Mohan, MD[1]
Nigist Taddese, MBChB[1]
Yaveen Santhiraj, MD[1]
Natasa Margeta, MD[1]
Saad Alvi, MD[1]
Umair Jabbar, MD[1]
Aniesh Bobba, MD[1]
Jihad Alharash, MD[1]
Michael J. Hoffman, MD[1]

[1]Department of Medicine, Division of Hospital Medicine, John H Stroger Jr, Hospital of Cook County, Chicago, IL. United States of America.

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Corresponding author:
Tania Campagnoli
1950 W Polk St, 6th floor, Cubicle 6-80
Chicago, IL 60612.
United States of America
Phone: 312-888-5767
Email: tcampagnoli@cookcountyhhs.org

Alternate corresponding author:
Michael J Hoffman
1950 W Polk St, 7th floor, Office 7702
Chicago, IL 60612.
United States of America
phone: 312-864-4502
Email: michael.hoffman@cookcountyhhs.org

ABSTRACT

Background: Vaccines against SARS-CoV-2 virus have been available since December 2020. Vaccination rates amongst hospitalized patients at our institution remained low at about 40%, thus we sought to understand the drivers of vaccine hesitancy in our patient population.

Methods: All unvaccinated adult patients admitted to our hospital were asked to participate in a survey to assess COVID-19 vaccine hesitancy. Updated vaccination status was collected at the end of the study.

Results: 97 patients agreed to participate, of which 34% were SARS-CoV-2 positive on polymerase chain reaction (PCR) testing. Of the 64 participants eligible to receive the vaccine, 57.8% were agreeable but only 27% received the vaccine before discharge.

Conclusion: Many patients are willing to receive the vaccine and hospitalization provides a unique opportunity to interact with patients who have been otherwise unaware, unable, or unwilling to pursue vaccination outside of the hospital.

INTRODUCTION

Since the first reported case of coronavirus disease 2019 (COVID-19), the resulting global pandemic has led to over seventy-seven million infections and close to one million deaths in the United States[1]. Vaccines against SARS-CoV-2 have been available since December 2020. Vaccination rate in the United States is approximately 65%[1,2]. However, our local experience in our urban safety-net hospital shows a vaccination rate through February 2022 of approximately 40%.

Unvaccinated adults are three times more likely to test positive for COVID-19 and are sixteen times more likely to get hospitalized compared to those fully vaccinated[3]. With the emergence of SARS-CoV-2 variants re-challenging our health care system, it is critical that we improve vaccination rates across our communities to reduce transmission, severity of illness, and to mitigate hospitalizations.

Our hospital has offered inpatient vaccination since April 2021; however, the vaccination rate is low. Given the substantial proportion of unvaccinated patients admitted to our hospital and the low rate of vaccination, we sought to understand the drivers for vaccine hesitancy and assess for opportunities to improve COVID-19 vaccination rates amongst our patients.

METHODS

Study Participants

Adult patients (> 18 years of age) admitted to the medical/surgical wards from January 10, 2022 to February 6, 2022, were screened for their COVID-19 vaccination status. All unvaccinated patients were offered the opportunity to participate in the survey. Patients with encephalopathy, dementia, or those

currently incarcerated were excluded. The survey was conducted by a physician, either in person or by phone.

Measurements

We developed a survey to understand drivers of vaccine hesitancy in study participants. We collected demographic, economic and social data as seen in Table 1. Race and ethnicity were self-identified. We also inquired about COVID-19 infection history, rationale behind their unvaccinated status, assessed patients' willingness to obtain a COVID-19 vaccination, and discussed entities that patients trusted to provide them with accurate information about the COVID-19 vaccines.

For patients interested in being vaccinated, the primary team was contacted and made aware of this interest. Vaccine administration data was then collected at the end of the study period. For patients with active COVID-19 infection, vaccination was recommended once recovered from acute infection.

Data Analysis

IBM SPSS statistics was used to analyze the data. Descriptive statistics, frequencies and percentages were calculated to describe the cohort and the data was then separated according to vaccine willingness for comparison of the groups.

RESULTS

Participant Characteristics

Of the 124 patients approached, 97 (78.2%) agreed to participate. Of those surveyed, 34% tested positive for COVID-19 via PCR testing. As seen in Table 1, the majority (66%) were male. The largest

proportion of patients surveyed identified as Black at 58%, followed by Hispanic at 28% and White at 14%. Consistent with our patient population, 5% were homeless, and 20% were not United States citizens or permanent residents. Some form of healthcare insurance was available to 70% of patients. The majority were unemployed (60%). Only about 50% reported seeing a doctor in the prior 6 months.

Acceptance of COVID-19 Vaccine

64 study participants had a negative SARS-CoV-2 PCR on admission, making them eligible to get vaccinated during the same hospitalization. Of these, 57.8% were agreeable to receive the COVID-19 vaccine, however only 27% received it before hospital discharge.

Comparing participants willing to those unwilling to be vaccinated (Table 1), we noted that those between the ages of 50 and 60 years were most willing to receive the vaccine (73%).There was a difference amongst race/ethnicity as well in that 80% of Hispanic participants agreed to be vaccinated versus 62% of Black participants and 40% of White participants. Patients with a household size of more than five people were more likely to agree to get vaccinated versus not.

Of the 63 participants willing to get vaccinated, 58.7% had not seen a doctor in the past six months and 65.6% had not spoken to a health care worker about the vaccine. Of the 45 participants that reported trust in health care workers, 75% agreed to get vaccinated.

Trusted sources included physician (53%), news (31%) and family and friends (28%). 8% trusted no-one and only 19% trusted the internet.

Drivers for low COVID-19 Vaccination Rates

Of those stating their willingness to receive the vaccine, the main driver of being unvaccinated appears to be missed opportunity. This takes several forms in that the majority either did not have access or did not see a doctor recently, and some had a poor understanding of whether the vaccine was safe for them given their other medical conditions. Others felt they did not have easy access to the vaccine and thus wanted to take the opportunity to be vaccinated while in the hospital.

Of those still not willing to receive the vaccine, the main reasons included fear of short and long-term side effects, not enough research on the COVID-19 vaccines, the belief that it is not effective, and government mistrust.

DISCUSSION

Eighty percent of our unvaccinated patients surveyed were Black and Hispanic. Our finding of greater vaccine hesitancy among these minority groups has been shown in previous studies[4,5] and are in accordance with the report of the Cook County Department of Public Health which shows that vaccination rates in the entirety of Cook County, Illinois are lower in Black (64%), and Hispanic (65%) populations compared to Whites (79%)[6]. These differences could be related to distrust of the medical establishment and government, especially in the Black population[7]. Interestingly, however, 81% of Hispanic and 62% of Black participants agreed to get vaccinated prior to discharge home, leading us to believe this could be more of an access issue than absolute vaccination refusal – a truly missed opportunity.

The age groups most willing to receive the vaccine were 50 to 60 years (73%) followed by 35 to 49 years (70%). Vaccine uptake may vary among different age groups. For instance, Luyten et al found that adults aged 50 to 59 had more vaccine confidence than those aged 20 to 29[8]. The high rate of willingness in our patients in this age group may be because they have more barriers to access of the vaccine related to comorbidities, transportation, technology and employment related issues. This population will benefit from vaccination at any time of healthcare contact.

Participants reported that a reliable source discussing the research and benefits of the vaccine would change their mind about receiving the vaccine. This is illustrated by 53% of all participants indicating that they trust physicians to give them reliable information about the vaccine. This finding is encouraging and previously documented[9-11]. Another missed opportunity is seen here in that those surveyed are currently under the care of inpatient physician teams, but COVID-19 vaccination had not been discussed with these patients. Inpatient teams are managing multiple complex medical problems and therefore may not prioritize discussing COVID-19 vaccination status with their patients. Our study highlights that missed opportunities for healthcare providers recommending and administering vaccines to patients are still common and that physician-prompted discussions regarding the COVID-19 vaccine, in an inpatient setting, can be effective in increasing vaccination rates.

Half of our study subjects do not see a doctor regularly. Establishing them with a primary care physician would give them the opportunity to discuss COVID-19 vaccination and address their hesitancy with a reliable source, thereby increasing the likelihood of accepting the vaccine. Unfortunately, the shift from in-person clinic visits to tele-health visits during the pandemic has likely led to decreased opportunities to speak with healthcare providers and receive the vaccine in a convenient manner.

Despite our efforts only 27% of patients agreeable to get the vaccine received the vaccine during their hospitalization. There are likely several reasons for this. The physician team is likely more focused on the reason for hospitalization and did not prioritize COVID-19 vaccination or felt that it may be contraindicated during this hospitalization. Also, the logistics of receiving the COVID-19 vaccine while hospitalized requires significant forethought and planning to reduce vaccine waste given the limited shelf life of the vaccine. Health care systems need to work on logistics to make the vaccine more accessible to patients so as not to miss more opportunities to vaccinate those who are willing.

CONCLUSIONS

It is long known that the physician-patient relationship is critical. Our study confirms that our patients do, in fact, trust their healthcare providers. Unfortunately, many of them have not had access to a physician and thus this important bond has not been able to be leveraged to increase vaccination rates amongst some of the most vulnerable. Physicians of all specialties should have the knowledge and ability to talk to patients about the COVID-19 vaccine at all points of contact in order to increase vaccine uptake. While COVID-19 vaccination of eligible inpatients has logistical and clinical challenges, it provides a unique opportunity to interact with patients who have not had access to a physician and have been otherwise unaware, unable or unwilling to pursue vaccination outside of the hospital. We must seize this so as not to miss another opportunity.

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Table 1. Sociodemographic characteristics, access to care and trust in health care.

	Total sample, n (%)	Willing to get vaccination	
		Yes, n (%)	No, n (%)
Gender			
Male	64 (66)	41 (64)	23 (36)
Female	33 (34)	22 (66)	11 (34)
Age			
18-24	7 (7)	4 (57)	3 (43)
25-34	15 (16)	7 (46)	8 (54)
35-49	20 (21)	14 (70)	6 (30)
50-64	45 (46)	33 (73)	12 (27)
>65	10 (10)	5 (50)	5 (50)
Race/Ethnicity			
Black	56 (58)	35 (62)	21(38)
Hispanic	26 (27)	21 (81)	5 (19)
White	14 (14)	6 (43)	8 (57)
Asian	1 (1)	0 (0)	1 (100)
Homeless			
Yes	92 (95)	60 (65)	32 (35)
No	5 (5)	3 (60)	2 (40)
Household size			
1	18 (19)	12 (67)	6 (33)
2-4	59 (64)	36 (61)	23 (39)
>5	16 (17)	13 (81)	3 (9)
Level of education			
< 8th	8 (8)	7 (87.5)	1 (12.5)
8-12th	58 (60)	37 (64)	21 (36)
College/University	31 (32)	19 (61)	12 (39)
Employed			
Yes	40 (41)	25 (62.5)	15 (37.5)
No	57 (59)	38 (67)	19 (33)
Occupational exposure			
Yes	30 (31)	22 (73)	8 (27)
No	66 (69)	40 (61)	26 (39)
Past Covid-19 infection			
Yes	20 (21)	10 (50)	10 (50)
No	77 (79)	53 (69)	24 (31)
Know someone who suffered severe covid-19			
Yes	43 (46)	26 (60)	17(40)
No	51 (54)	37 (72.5)	14(27.5)

Seen a doctor in the last 6 months			
Yes	47 (49)	26 (55)	21 (45)
No	50 (51)	37 (74)	13 (26)
Talked to a doctor about vaccination			
Yes	34 (38)	20 (59)	14 (41)
No	55 (62)	38 (69)	17 (31)
Trust doctors to deliver information about COVID-19			
Yes	45 (53)	34 (75)	11(25)
No	40 (47)	23(57.5)	17 (42.5)
Health care insurance			
Yes	67 (69)	39 (58)	28 (42)
No	30 (31)	24 (80)	6 (20)

Note: Of the 97 patients that participated in the survey, 63 patients were willing to get the vaccine versus 34 patients unwilling. Patient demographics and pertinent answers are documented in this table. Percentage in willingness or unwillingness of vaccination is according to characteristic. Not everyone completed the full survey.